

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-009-00196 County BROOKE District BUFFALO  
Quad BETHANY Pad Name JOHN GOOD JR BRK PAD Field/Pool Name PANHANDLE FIELD WET  
Farm name JOHN P. GOOD JR. IRREVOCABLE Well Number JOHN GOOD JR BRK 206H  
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC  
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,452,685.274 Easting 535,674.834  
Landing Point of Curve Northing 4,452,408.079 Easting 535,108.130  
Bottom Hole Northing 4,449,862.634 Easting 536,149.743

Elevation (ft) 1152.6 GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
SOBM

RECEIVED  
Office of Oil and Gas  
MAR 23 2018  
WV Department of  
Environmental Protection

Date permit issued 6/6/2017 Date drilling commenced 6/24/17 Date drilling ceased 8/5/17  
Date completion activities began 11/28/17 Date completion activities ceased 1/7/18  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 326 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 448 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 308 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed

*C. Miller 5.10.18*

Reviewed by: \_\_\_\_\_

API 47- 009 - 00196 Farm name JOHN P. GOOD JR. IRREVOCABLE Well number JOHN GOOD JR BRK 206H

| CASING STRINGS            | Hole Size   | Casing Size | Depth | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/ N)<br>* Provide details below* |
|---------------------------|-------------|-------------|-------|-------------|-------------|-----------------|---|
| Conductor                 | 26          | 20          | 126   | NEW         | J-55/94#    |                 | Y   |
| Surface                   | 17.5        | 13.375      | 381   | NEW         | H-40/48#    |                 | Y, 15 BBLS  |
| Coal                      | SEE SURFACE |             |       |             |             |                 |   |
| Intermediate 1            | 12.25       | 9.625       | 1663  | NEW         | J-55/36#    |                 | Y, 30 BBLS  |
| Intermediate 2            |             |             |       |             |             |                 |   |
| Intermediate 3            |             |             |       |             |             |                 |   |
| Production                | 8.75/8.50   | 5.5         | 15920 | NEW         | HCP-110/20# |                 | Y   |
| Tubing                    |             | 2.375       | 6712  | NEW         | P-110/4.7#  |                 | N   |
| Packer type and depth set |             |             |       |             |             |                 |   |

Comment Details \_\_\_\_\_

| CEMENT DATA    | Class/Type of Cement | Number of Sacks  | Slurry wt (ppg) | Yield (ft <sup>3</sup> /sks) | Volume (ft <sup>3</sup> ) | Cement Top (MD) | WOC (hrs) |
|----------------|----------------------|------------------|-----------------|------------------------------|---------------------------|-----------------|-----------|
| Conductor      | CLASS A              | GROUT TO SURFACE |                 |                              |                           | SURFACE         | 24        |
| Surface        | CLASS A              | 378              | 15.60           | 1.20                         | 453.6                     | SURFACE         | 8         |
| Coal           | SEE SURFACE          |                  |                 |                              |                           |                 |           |
| Intermediate 1 | CLASS A              | 642              | 15.60           | 1.18                         | 757.56                    | SURFACE         | 8         |
| Intermediate 2 |                      |                  |                 |                              |                           |                 |           |
| Intermediate 3 |                      |                  |                 |                              |                           |                 |           |
| Production     | CLASS A              | 3104             | 15.60           | 1.19                         | 3693.76                   | SURFACE         | 24        |
| Tubing         |                      |                  |                 |                              |                           |                 |           |

Drillers TD (ft) 15920 Loggers TD (ft) 15920  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5695

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING  
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING  
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

API 47- 009 - 00196 Farm name JOHN P. GOOD JR. IRREVOCABLE Well number JOHN GOOD JR BRK 206H

PERFORATION RECORD

| Stage No. | Perforation date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formation(s) |
|-----------|------------------|------------------------|----------------------|------------------------|--------------|
|           | SEE              | ATTACHMENT             | 1                    |                        |              |
|           |                  |                        |                      |                        |              |
|           |                  |                        |                      |                        |              |
|           |                  |                        |                      |                        |              |
|           |                  |                        |                      |                        |              |
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|           |                  |                        |                      |                        |              |
|           |                  |                        |                      |                        |              |
|           |                  |                        |                      |                        |              |

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

| Stage No. | Stimulations Date | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/other (units) |
|-----------|-------------------|---------------------|------------------------------|------------------------------|------------|--------------------------|------------------------|----------------------------------|
|           |                   | SEE                 | ATTACHMENT                   | 2                            |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |
|           |                   |                     |                              |                              |            |                          |                        |                                  |

Please insert additional pages as applicable.

API 47- 009 - 00196 Farm name JOHN P. GOOD JR. IRREVOCABLE Well number JOHN GOOD JR BRK 206H

| PRODUCING FORMATION(S) | DEPTHS          |                |
|------------------------|-----------------|----------------|
| <u>MARCELLUS</u>       | <u>5863</u> TVD | <u>6606</u> MD |
| _____                  | _____           | _____          |
| _____                  | _____           | _____          |
| _____                  | _____           | _____          |

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1100 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 3599 mcfpd Oil 642 bpd NGL \_\_\_\_\_ bpd Water 934 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

| LITHOLOGY/<br>FORMATION | TOP                     | BOTTOM             | TOP               | BOTTOM            | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND<br>TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC) |
|-------------------------|-------------------------|--------------------|-------------------|-------------------|--|
|                         | DEPTH IN FT<br>NAME TVD | DEPTH IN FT<br>TVD | DEPTH IN FT<br>MD | DEPTH IN FT<br>MD |  |
|                         | <u>0</u>                |                    | <u>0</u>          |                   |  |
|                         | <u>SEE</u>              | <u>ATTACHMENT</u>  | <u>3</u>          |                   |  |
|                         |                         |                    |                   |                   |  |
|                         |                         |                    |                   |                   |  |
|                         |                         |                    |                   |                   |  |
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|                         |                         |                    |                   |                   |  |
|                         |                         |                    |                   |                   |  |
|                         |                         |                    |                   |                   |  |

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY  
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company BAKER HUGHES  
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

Cementing Company SCHLUMBERGER WELL SERVICES  
Address 110 SCHLUMBERGER DRIVE City SUGARLAND State TX Zip 77478

Stimulating Company HALLIBURTON ENERGY SERVICE  
Address 14851 MILNER ROAD, GATE 5A City HOUSTON State TX Zip 77032

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-7632  
Signature  Title Regulatory Analyst Date 03/22/2018

JOHN GOOD JR BRK 206H

Perf Summary

Attachment 1

| STAGE NUM | Perf Date  | Perf Top MD | Perf Bottom MD | # SHOTS PER STG |
|-----------|------------|-------------|----------------|-----------------|
| 1         | 9/30/2017  | 15,698      | 15,805         | 42              |
| 2         | 11/28/2017 | 15,558      | 15,665         | 42              |
| 3         | 11/28/2017 | 15,418      | 15,525         | 42              |
| 4         | 11/28/2017 | 15,278      | 15,385         | 42              |
| 5         | 11/28/2017 | 15,138      | 15,245         | 42              |
| 6         | 11/29/2017 | 15,002      | 15,105         | 42              |
| 7         | 11/29/2017 | 14,858      | 14,965         | 42              |
| 8         | 11/29/2017 | 14,718      | 14,825         | 42              |
| 9         | 11/29/2017 | 14,578      | 14,685         | 42              |
| 10        | 11/30/2017 | 14,438      | 14,545         | 42              |
| 11        | 11/30/2017 | 14,298      | 14,405         | 42              |
| 12        | 11/30/2017 | 14,158      | 14,265         | 42              |
| 13        | 11/30/2017 | 14,018      | 14,125         | 42              |
| 14        | 12/1/2017  | 13,878      | 13,985         | 42              |
| 15        | 12/1/2017  | 13,738      | 13,845         | 42              |
| 16        | 12/1/2017  | 13,598      | 13,705         | 42              |
| 17        | 12/2/2017  | 13,458      | 13,565         | 42              |
| 18        | 12/2/2017  | 13,318      | 13,425         | 42              |
| 19        | 12/2/2017  | 13,178      | 13,285         | 42              |
| 20        | 12/2/2017  | 13,038      | 13,145         | 42              |
| 21        | 12/3/2017  | 12,898      | 13,005         | 42              |
| 22        | 12/3/2017  | 12,760      | 12,865         | 42              |
| 23        | 12/3/2017  | 12,618      | 12,725         | 42              |
| 24        | 12/3/2017  | 12,478      | 12,585         | 42              |
| 25        | 12/4/2017  | 12,338      | 12,445         | 42              |
| 26        | 12/4/2017  | 12,195      | 12,298         | 42              |
| 27        | 12/4/2017  | 12,058      | 12,165         | 42              |
| 28        | 12/4/2017  | 11,918      | 12,025         | 42              |
| 29        | 12/5/2017  | 11,778      | 11,885         | 42              |
| 30        | 12/5/2017  | 11,638      | 11,745         | 42              |
| 31        | 12/5/2017  | 11,501      | 11,605         | 42              |
| 32        | 12/5/2017  | 11,358      | 11,465         | 42              |
| 33        | 12/6/2017  | 11,218      | 11,325         | 42              |
| 34        | 12/6/2017  | 11,078      | 11,185         | 42              |
| 35        | 12/6/2017  | 10,938      | 11,045         | 42              |
| 36        | 12/6/2017  | 10,798      | 10,905         | 42              |
| 37        | 12/7/2017  | 10,518      | 10,625         | 42              |
| 38        | 12/7/2017  | 10,658      | 10,765         | 42              |
| 39        | 12/7/2017  | 10,378      | 10,485         | 42              |
| 40        | 12/7/2017  | 10,238      | 10,345         | 42              |
| 41        | 12/8/2017  | 10,098      | 10,205         | 42              |
| 42        | 12/8/2017  | 9,958       | 10,065         | 42              |
| 43        | 12/8/2017  | 9,818       | 9,925          | 42              |

JOHN GOOD JR BRK 206H

Perf Summary

Attachment 1

| STAGE NUM | Perf Date  | Perf Top MD | Perf Bottom MD | # SHOTS PER STG |
|-----------|------------|-------------|----------------|-----------------|
| 44        | 12/8/2017  | 9,678       | 9,785          | 42              |
| 45        | 12/9/2017  | 9,538       | 9,645          | 42              |
| 46        | 12/9/2017  | 9,398       | 9,505          | 42              |
| 47        | 12/9/2017  | 9,258       | 9,365          | 42              |
| 48        | 12/9/2017  | 9,118       | 9,225          | 42              |
| 49        | 12/9/2017  | 8,978       | 9,085          | 42              |
| 50        | 12/10/2017 | 8,838       | 8,945          | 42              |
| 51        | 12/10/2017 | 8,698       | 8,805          | 42              |
| 52        | 12/10/2017 | 8,558       | 8,665          | 42              |
| 53        | 12/10/2017 | 8,418       | 8,525          | 42              |
| 54        | 12/11/2017 | 8,278       | 8,385          | 42              |
| 55        | 12/11/2017 | 8,138       | 8,245          | 42              |
| 56        | 12/11/2017 | 7,998       | 8,105          | 42              |
| 57        | 12/11/2017 | 7,858       | 7,965          | 42              |
| 58        | 12/11/2017 | 7,718       | 7,825          | 42              |
| 59        | 12/12/2017 | 7,578       | 7,685          | 42              |
| 60        | 12/12/2017 | 7,438       | 7,545          | 42              |
| 61        | 12/12/2017 | 7,298       | 7,405          | 42              |
| 62        | 12/12/2017 | 7,158       | 7,263          | 42              |
| 63        | 12/13/2017 | 7,018       | 7,125          | 42              |
| 64        | 12/13/2017 | 6,878       | 6,985          | 42              |
| 65        | 12/13/2017 | 6,738       | 6,845          | 42              |

JOHN GOOD JR BRK 206H

Frac Summary

Attachment 2

| STAGE NUM | Stim Date  | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of water bbls | Amount of nitrogen/ other |
|-----------|------------|---------------------|------------------------------|------------------------------|------------|--------------------------|----------------------|---------------------------|
| 1         | 11/28/2017 | 85                  | 7,602                        | 8,864                        | 3,679      | 280,580                  | 6,157                |                           |
| 2         | 11/28/2017 | 84                  | 8,175                        | 8,866                        | 3,638      | 280,280                  | 5,436                |                           |
| 3         | 11/28/2017 | 88                  | 7,660                        | 8,241                        | 3,876      | 280,000                  | 5,832                |                           |
| 4         | 11/28/2017 | 92                  | 8,066                        | 8,445                        | 4,137      | 279,820                  | 5,185                |                           |
| 5         | 11/29/2017 | 85                  | 8,182                        | 8,564                        | 3,871      | 280,180                  | 5,243                |                           |
| 6         | 11/29/2017 | 91                  | 7,992                        | 8,256                        | 3,974      | 287,820                  | 5,552                |                           |
| 7         | 11/29/2017 | 85                  | 8,439                        | 8,811                        | 3,946      | 292,080                  | 5,357                |                           |
| 8         | 11/29/2017 | 91                  | 8,068                        | 8,630                        | 4,022      | 288,540                  | 5,681                |                           |
| 9         | 11/30/2017 | 94                  | 8,138                        | 8,728                        | 4,369      | 289,380                  | 5,232                |                           |
| 10        | 11/30/2017 | 91                  | 8,034                        | 8,503                        | 4,090      | 280,080                  | 5,369                |                           |
| 11        | 11/30/2017 | 88                  | 8,431                        | 8,822                        | 3,956      | 281,880                  | 5,250                |                           |
| 12        | 11/30/2017 | 95                  | 8,261                        | 9,009                        | 4,068      | 279,760                  | 5,474                |                           |
| 13        | 12/1/2017  | 76                  | 7,767                        | 9,294                        | 3,947      | 276,600                  | 7,935                |                           |
| 14        | 12/1/2017  | 96                  | 8,123                        | 8,465                        | 4,310      | 287,500                  | 5,534                |                           |
| 15        | 12/1/2017  | 98                  | 8,263                        | 8,643                        | 4,049      | 277,500                  | 5,296                |                           |
| 16        | 12/2/2017  | 92                  | 8,293                        | 8,796                        | 4,028      | 288,500                  | 5,328                |                           |
| 17        | 12/2/2017  | 94                  | 7,881                        | 8,581                        | 4,097      | 289,380                  | 5,545                |                           |
| 18        | 12/2/2017  | 92                  | 8,478                        | 8,761                        | 3,943      | 284,920                  | 5,518                |                           |
| 19        | 12/2/2017  | 94                  | 7,845                        | 8,457                        | 3,999      | 285,400                  | 5,179                |                           |
| 20        | 12/3/2017  | 99                  | 8,027                        | 9,270                        | 4,075      | 288,300                  | 5,261                |                           |
| 21        | 12/3/2017  | 100                 | 7,898                        | 8,994                        | 4,168      | 278,930                  | 5,424                |                           |
| 22        | 12/3/2017  | 96                  | 8,230                        | 9,063                        | 4,159      | 284,680                  | 5,381                |                           |
| 23        | 12/3/2017  | 94                  | 7,953                        | 8,527                        | 4,341      | 288,680                  | 5,306                |                           |
| 24        | 12/4/2017  | 88                  | 8,179                        | 9,270                        | 3,869      | 283,690                  | 5,605                |                           |
| 25        | 12/4/2017  | 98                  | 8,015                        | 8,923                        | 3,987      | 275,740                  | 5,460                |                           |
| 26        | 12/4/2017  | 95                  | 8,011                        | 8,991                        | 4,025      | 275,100                  | 5,350                |                           |
| 27        | 12/4/2017  | 97                  | 7,303                        | 7,612                        | 4,053      | 277,340                  | 5,383                |                           |
| 28        | 12/5/2017  | 98                  | 7,991                        | 8,471                        | 4,171      | 276,400                  | 5,358                |                           |
| 29        | 12/5/2017  | 98                  | 7,959                        | 8,645                        | 4,284      | 273,700                  | 5,395                |                           |
| 30        | 12/5/2017  | 90                  | 8,411                        | 9,150                        | 4,173      | 278,940                  | 5,400                |                           |
| 31        | 12/5/2017  | 94                  | 8,112                        | 8,871                        | 4,194      | 288,200                  | 5,403                |                           |
| 32        | 12/6/2017  | 92                  | 7,283                        | 7,710                        | 4,125      | 283,760                  | 5,235                |                           |
| 33        | 12/6/2017  | 97                  | 7,416                        | 7,627                        | 4,296      | 281,900                  | 5,301                |                           |
| 34        | 12/6/2017  | 98                  | 7,551                        | 8,012                        | 4,231      | 281,420                  | 5,109                |                           |
| 35        | 12/6/2017  | 97                  | 8,065                        | 8,650                        | 4,341      | 282,480                  | 4,952                |                           |
| 36        | 12/6/2017  | 97                  | 7,783                        | 8,443                        | 4,120      | 284,360                  | 5,250                |                           |
| 37        | 12/7/2017  | 98                  | 8,000                        | 8,232                        | 4,111      | 279,480                  | 5,353                |                           |
| 38        | 12/7/2017  | 99                  | 7,306                        | 7,565                        | 4,191      | 281,900                  | 4,794                |                           |
| 39        | 12/7/2017  | 99                  | 7,812                        | 8,603                        | 4,146      | 273,000                  | 5,170                |                           |

JOHN GOOD JR BRK 206H

Frac Summary

Attachment 2

| STAGE NUM | Stim Date  | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of water bbls | Amount of nitrogen/ other |
|-----------|------------|---------------------|------------------------------|------------------------------|------------|--------------------------|----------------------|---------------------------|
| 40        | 12/7/2017  | 99                  | 7,890                        | 8,218                        | 4,161      | 271,040                  | 5,072                |                           |
| 41        | 12/8/2017  | 80                  | 7,941                        | 9,216                        | 4,150      | 279,400                  | 7,468                |                           |
| 42        | 12/8/2017  | 98                  | 7,230                        | 7,751                        | 4,214      | 277,140                  | 4,820                |                           |
| 43        | 12/8/2017  | 98                  | 7,576                        | 8,267                        | 4,245      | 282,820                  | 4,775                |                           |
| 44        | 12/8/2017  | 99                  | 7,307                        | 8,505                        | 4,339      | 279,960                  | 4,867                |                           |
| 45        | 12/9/2017  | 98                  | 7,589                        | 8,276                        | 4,283      | 280,800                  | 4,836                |                           |
| 46        | 12/9/2017  | 98                  | 7,089                        | 7,381                        | 4,210      | 284,780                  | 4,656                |                           |
| 47        | 12/9/2017  | 90                  | 7,323                        | 8,730                        | 4,365      | 283,560                  | 4,456                |                           |
| 48        | 12/9/2017  | 99                  | 7,322                        | 8,529                        | 4,243      | 285,500                  | 5,151                |                           |
| 49        | 12/10/2017 | 100                 | 7,466                        | 8,968                        | 4,165      | 279,300                  | 4,783                |                           |
| 50        | 12/10/2017 | 98                  | 6,795                        | 7,066                        | 4,185      | 277,880                  | 4,346                |                           |
| 51        | 12/10/2017 | 96                  | 7,299                        | 8,575                        | 4,218      | 282,020                  | 4,236                |                           |
| 52        | 12/10/2017 | 101                 | 6,959                        | 7,604                        | 4,273      | 281,540                  | 4,603                |                           |
| 53        | 12/10/2017 | 98                  | 7,410                        | 8,892                        | 4,103      | 281,220                  | 4,777                |                           |
| 54        | 12/11/2017 | 99                  | 6,775                        | 7,404                        | 4,316      | 282,060                  | 4,505                |                           |
| 55        | 12/11/2017 | 98                  | 7,257                        | 7,618                        | 4,199      | 282,400                  | 4,271                |                           |
| 56        | 12/11/2017 | 100                 | 7,129                        | 7,431                        | 4,191      | 279,020                  | 4,203                |                           |
| 57        | 12/11/2017 | 101                 | 6,782                        | 7,378                        | 4,194      | 280,320                  | 4,524                |                           |
| 58        | 12/12/2017 | 99                  | 6,888                        | 7,508                        | 4,284      | 280,160                  | 4,353                |                           |
| 59        | 12/12/2017 | 99                  | 7,284                        | 9,012                        | 4,162      | 277,140                  | 4,472                |                           |
| 60        | 12/12/2017 | 99                  | 6,819                        | 7,808                        | 4,325      | 276,620                  | 4,066                |                           |
| 61        | 12/12/2017 | 82                  | 7,125                        | 9,425                        | 4,286      | 242,860                  | 5,995                |                           |
| 62        | 12/13/2017 | 98                  | 7,220                        | 7,631                        | 4,283      | 274,160                  | 4,375                |                           |
| 63        | 12/13/2017 | 96                  | 6,796                        | 7,740                        | 4,539      | 278,080                  | 4,299                |                           |
| 64        | 12/13/2017 | 98                  | 6,352                        | 6,788                        | 4,371      | 280,400                  | 4,185                |                           |
| 65        | 12/13/2017 | 100                 | 6,812                        | 7,134                        | 4,348      | 280,460                  | 4,078                |                           |





Well Name: John Good Jr BRK 206H

47009001960000

| LITHOLOGY/FORMATION | TOP DEPTH, MD (FT) | TOP DEPTH, TVD (FT) | BOTTOM DEPTH, MD (FT) | BOTTOM DEPTH, TVD (FT) | QUANTITY AND TYPE OF FLUID |
|---------------------|--------------------|---------------------|-----------------------|------------------------|----------------------------|
| Base of Fresh Water | 0.00               | 0.00                | 326.00                | 326.00                 |                            |
| Top of Salt Water   | 448.00             | 448.00              | NA                    | NA                     |                            |
| Pittsburgh Coal     | 308.00             | 308.00              | 312.00                | 312.00                 |                            |
| Pottsville (ss)     | 440.00             | 440.00              | 477.00                | 477.00                 |                            |
| Mauch Chunk (shale) | 639.00             | 639.00              | 1302.00               | 1302.00                |                            |
| Raven Cliff (ss)    | 789.00             | 789.00              | 946.00                | 946.00                 |                            |
| Maxton (ss)         | 1130.00            | 1130.00             | 1302.00               | 1302.00                |                            |
| Greenbriar (ls)     | 1302.00            | 1302.00             | 1448.00               | 1446.00                |                            |
| Big Injun (ss)      | 1448.00            | 1446.00             | 1589.00               | 1585.00                |                            |
| Berea (siltstone)   | 1932.00            | 1924.00             | 5782.00               | 5319.00                |                            |
| Rhinestreet (shale) | 5782.00            | 5319.00             | 6058.10               | 5559.98                |                            |
| Cashaqua (shale)    | 6058.10            | 5559.98             | 6122.88               | 5612.50                |                            |
| Middlesex (shale)   | 6122.88            | 5612.50             | 6205.00               | 5676.00                |                            |
| Burket (shale)      | 6205.00            | 5676.00             | 6222.00               | 5688.00                |                            |
| Tully (ls)          | 6222.00            | 5688.00             | 6304.00               | 5743.00                |                            |
| Mahantango (shale)  | 6304.00            | 5743.00             | 6606.00               | 5863.00                |                            |
| Marcellus (shale)   | 6606.00            | 5863.00             | NA                    | NA                     | GAS                        |

# Hydraulic Fracturing Fluid Product Component Information Disclosure

|                                |                        |
|--------------------------------|------------------------|
| Job Start Date:                | 11/28/2017             |
| Job End Date:                  | 12/13/2017             |
| State:                         | West Virginia          |
| County:                        | Brooke                 |
| API Number:                    | 47-009-00196-00-00     |
| Operator Name:                 | Southwestern Energy    |
| Well Name and Number:          | John Good Jr. BRK 206H |
| Latitude:                      | 40.22380000            |
| Longitude:                     | -80.58069300           |
| Datum:                         | NAD83                  |
| Federal Well:                  | NO                     |
| Indian Well:                   | NO                     |
| True Vertical Depth:           | 5,949                  |
| Total Base Water Volume (gal): | 13,829,243             |
| Total Base Non Water Volume:   | 0                      |



## Hydraulic Fracturing Fluid Composition:

| Trade Name  | Supplier     | Purpose      | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments        |
|-------------|--------------|--------------|-------------|--|--|--|-----------------|
| Fresh Water | Operator     | Base Fluid   |             |  |  |  |                 |
|             |              |              | Water       | 7732-18-5                                | 100.00000  | 84.96877   | Density = 8.340 |
| Ingredients | Listed Above | Listed Above |             |  |  |  |                 |
|             |              |              | Water       | 7732-18-5                                | 100.00000  | 1.47927  |                 |



|  |  |  |  |             |           |         |  |
|--|--|--|--|-------------|-----------|---------|--|
|  |  |  |  | 64742-47-8  | 30.00000  | 0.02540 |  |
|  |  |  | Hydrotreated light petroleum distillate  |             |           |         |  |
|  |  |  | Acrylamide acrylate copolymer            | Proprietary | 30.00000  | 0.02540 | Denise Tuck,<br>Halliburton, 3000 N.<br>Sam Houston Pkwy E.,<br>Houston, TX 77032,<br>281-871-6226 |
|  |  |  | Methanol                                 | 67-56-1     | 60.00000  | 0.01342 |  |
|  |  |  | Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium | 68424-85-1  | 30.00000  | 0.00671 |  |
|  |  |  | Glutaraldehyde                           | 111-30-8    | 10.00000  | 0.00224 |  |
|  |  |  | Ethylene Glycol                          | 107-21-1    | 30.00000  | 0.00157 |  |
|  |  |  | Amine Triphosphate                       | Proprietary | 30.00000  | 0.00157 |  |
|  |  |  | Non-hazardous food substance             | Proprietary | 100.00000 | 0.00109 |  |

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

# SOUTHWESTERN ENERGY



API: 47-009-00196-0000  
 Job#: 8680420  
 Rig: SDC-46  
 Duration: 07/24/17 - 08/02/17

Location: Brooke County, WV  
 Slot: Slot #206  
 Well: John Good Jr BRK 206H  
 Facility: John Good Jr BRK Pad Wellbore: John Good Jr BRK 206H PWB

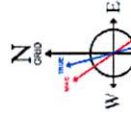
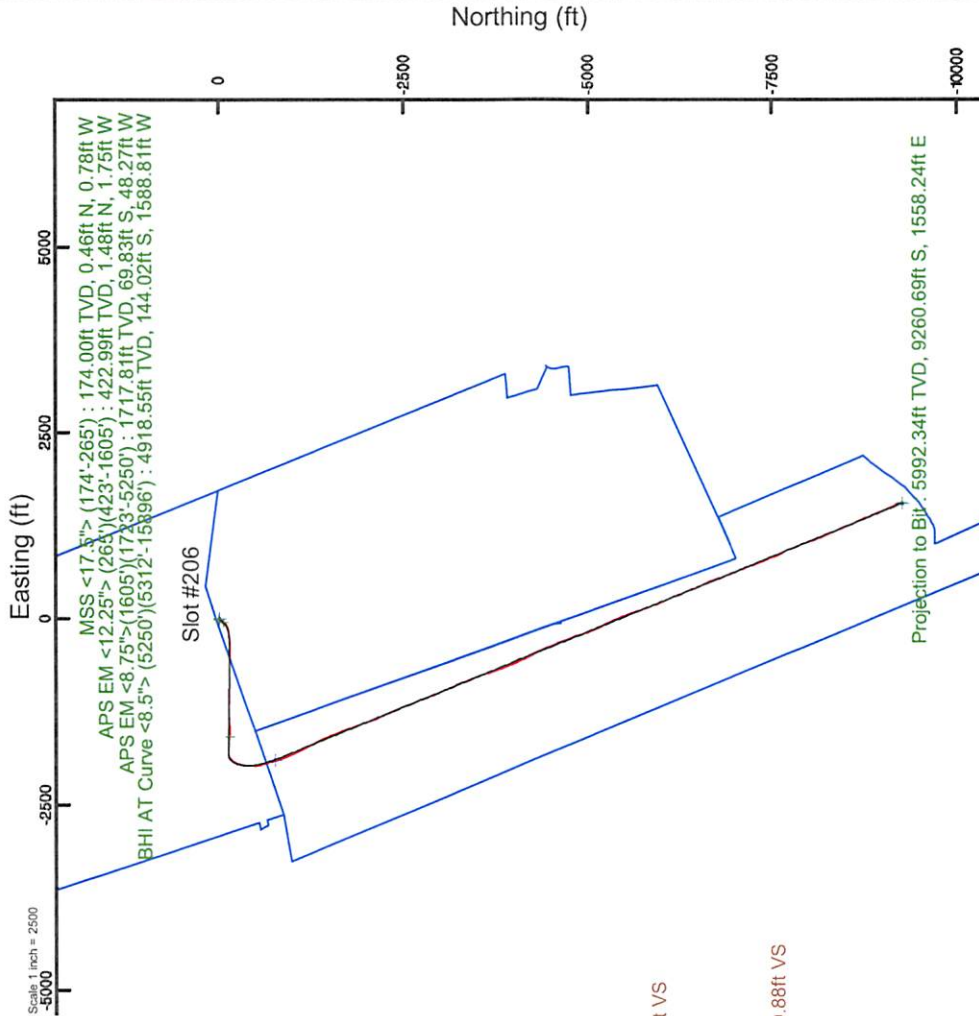
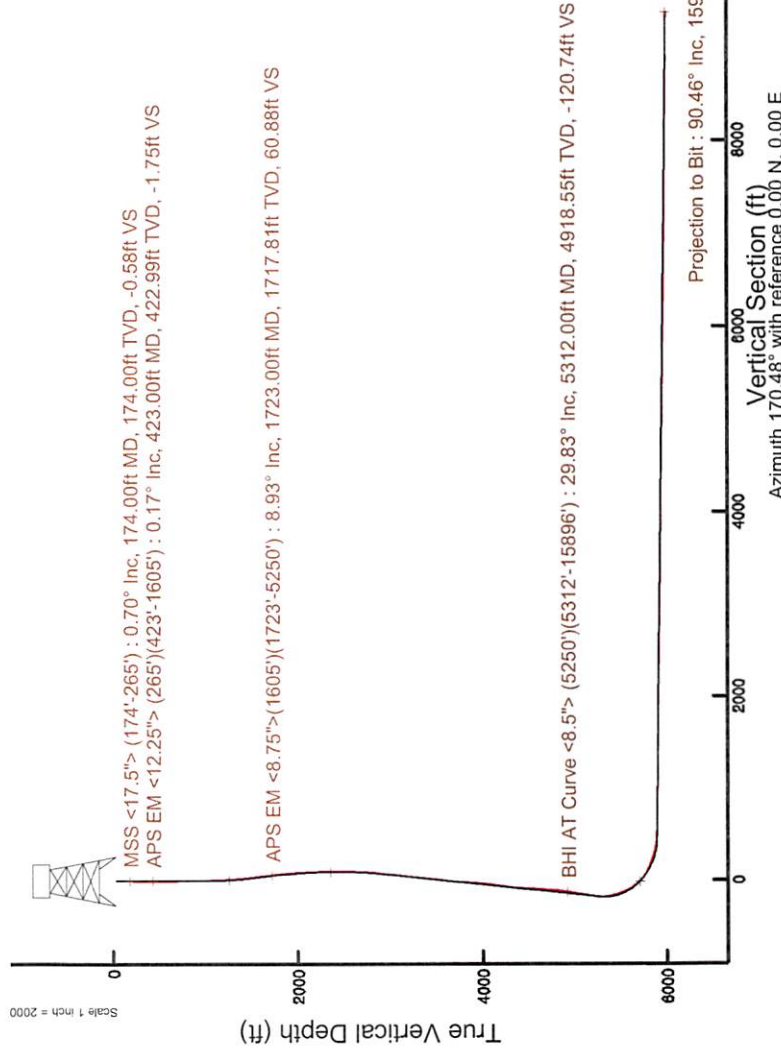
Plot reference wellpath is: John Good Jr BRK 206H PWP Rev-A.0 Grid System: NAD83 / UTM Zone 17 North, US feet  
 True vertical depths are referenced to SDC-46 (RKB) North Reference: Grid north  
 Measured depths are referenced to SDC-46 (RKB) Scale: True distance  
 SDC-46 (RKB) to Mean Sea Level: 1178.6 feet Depths are in feet  
 Mean Sea Level to Ground level (At Slot: Slot #206): -1152.6 feet Created by: amarc on 2017-06-04  
 Coordinates are in feet referenced to Slot Database: WA\_MPL\_EASTERNUS\_Defn

### Location Information

| Facility Name                                       | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      |
|---|-------------------|--------------------|----------------|----------------|
| John Good Jr BRK Pad                                | 1757463.232       | 14608504.851       | 40°13'25.666"N | 80°34'50.452"W |
| Slot #206   | 13.42             | -3.38              | 40°13'25.799"N | 80°34'50.495"W |
| SDC-46 (RKB) to Ground level (At Slot: Slot #206)   | 1757459.850       | 14608518.270       | 26ft           |                |
| Mean Sea Level to Ground level (At Slot: Slot #206) |                   |                    | -1152.6ft      |                |
| SDC-46 (RKB) to Mean Sea Level                      |                   |                    | 1178.6ft       |                |

### Well Profile Data

| Design Comment   | MD (ft)  | Inc (°) | Az (°)  | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
|------------------|----------|---------|---------|----------|--------------|--------------|---------------|---------|
| Tie On           | 26.00    | 0.000   | 220.000 | 26.00    | 0.00         | 0.00         | 0.00          | 0.00    |
| Start Nudge      | 1000.00  | 0.000   | 220.000 | 1000.00  | 0.00         | 0.00         | 0.00          | 0.00    |
| End Nudge        | 1500.00  | 10.000  | 220.000 | 1497.47  | -33.34       | -27.98       | 2.00          | 28.25   |
| Start Build/Turn | 1756.43  | 10.000  | 220.000 | 1750.00  | -67.45       | -56.60       | 0.00          | 57.16   |
| End Build/Turn   | 3001.03  | 30.077  | 270.889 | 2919.81  | -146.64      | -444.01      | 2.00          | 71.19   |
| Curve KOP        | 5732.77  | 30.077  | 270.889 | 5283.72  | -125.41      | -1812.90     | 0.00          | -176.15 |
| Landing Point    | 6739.66  | 89.326  | 157.908 | 5890.00  | -760.47      | -1899.33     | 10.00         | 435.86  |
| Total Depth      | 15920.28 | 89.326  | 157.908 | 5998.00  | -9266.47     | 1553.21      | 0.00          | 9395.74 |



User specified Dip: 67.74° Field: 52715 mT  
 Magnetic North is 67.74 degrees East of True North  
 Grid North is 0.27 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.27 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.59 degrees

Projection to Bit : 90.46° Inc, 15920.00ft MD, 5992.34ft TVD, 9390.87ft VS  
 Scale 1 inch = 2000

Vertical Section (ft)  
 Azimuth 170.48° with reference 0.00 N, 0.00 E

### REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

### REPORT SETUP INFORMATION

|                     |                                    |                      |   |
|---------------------|------------------------------------|----------------------|---|
| Projection System   | NAD83 / UTM Zone 17 North, US feet | Software System      | WellArchitect® 5.1  |
| North Reference     | Grid                               | User                 | Amarcar   |
| Scale               | 0.999616                           | Report Generated     | 04/Aug/2017 at 14:38  |
| Convergence at slot | 0.27° East                         | Database/Source file | WA_MPL_EASTERNUS_Defn/John_Good_Jr_BRK_206H_AWP_Proj_15920_.xml |

### WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | 13.42             | -3.38    | 1757459.85       | 14608518.27     | 40°13'25.799"N         | 80°34'50.495"W |
| Facility Reference Pt |                   |          | 1757463.23       | 14608504.85     | 40°13'25.666"N         | 80°34'50.452"W |
| Field Reference Pt    |                   |          | 0.00             | 0.00            | 0°00'00.000"           | 85°29'19.478"W |

### WELLPATH DATUM

|                          |                   |  |                   |
|--------------------------|-------------------|--|-------------------|
| Calculation method       | Minimum curvature | SDC-46 (RKB) to Facility Vertical Datum          | 26.00ft           |
| Horizontal Reference Pt  | Slot              | SDC-46 (RKB) to Mean Sea Level                   | 1178.60ft         |
| Vertical Reference Pt    | SDC-46 (RKB)      | SDC-46 (RKB) to Ground Level at Slot (Slot #206) | 26.00ft           |
| MD Reference Pt          | SDC-46 (RKB)      | Section Origin                                   | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level    | Section Azimuth                                  | 170.48°           |

# Actual Wellpath Report

John Good Jr BRK 206H AWP Proj: 15920'

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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
|----------|----------------------|----------|---------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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           | 300.480     | 0.00     | 0.00           | 0.00       | 0.00      | 1757459.85        | 14608518.27        | 40°13'25.799"N | 80°34'50.495"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 26.00   | 0.000           | 300.480     | 26.00    | 0.00           | 0.00       | 0.00      | 1757459.85        | 14608518.27        | 40°13'25.799"N | 80°34'50.495"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 174.00  | 0.700           | 300.480     | 174.00   | -0.58          | 0.46       | -0.78     | 1757459.07        | 14608518.73        | 40°13'25.803"N | 80°34'50.505"W | 0.90              | 300.480         | 0.47          | 0.47                 | -40.22              |
| 265.00  | 0.300           | 326.480     | 264.99   | -1.16          | 0.94       | -1.39     | 1757458.46        | 14608519.21        | 40°13'25.808"N | 80°34'50.513"W | 1.68              | 304.050         | 0.49          | -0.44                | 28.57               |
| 423.00  | 0.170           | 325.030     | 422.99   | -1.75          | 1.48       | -1.75     | 1757458.10        | 14608519.75        | 40°13'25.813"N | 80°34'50.517"W | 2.29              | 310.106         | 0.08          | -0.08                | -0.92               |
| 512.00  | 0.240           | 180.310     | 511.99   | -1.68          | 1.40       | -1.83     | 1757458.02        | 14608519.67        | 40°13'25.813"N | 80°34'50.518"W | 2.30              | 307.387         | 0.44          | 0.08                 | -162.61             |
| 605.00  | 0.240           | 151.590     | 604.99   | -1.30          | 1.03       | -1.74     | 1757458.11        | 14608519.30        | 40°13'25.809"N | 80°34'50.517"W | 2.02              | 300.702         | 0.13          | 0.00                 | -30.88              |
| 697.00  | 0.270           | 194.670     | 696.99   | -0.92          | 0.65       | -1.70     | 1757458.15        | 14608518.92        | 40°13'25.805"N | 80°34'50.517"W | 1.82              | 290.992         | 0.21          | 0.03                 | 46.83               |
| 790.00  | 0.760           | 172.550     | 789.99   | -0.11          | -0.17      | -1.68     | 1757458.17        | 14608518.10        | 40°13'25.797"N | 80°34'50.516"W | 1.69              | 264.177         | 0.56          | 0.53                 | -23.78              |
| 893.00  | 0.820           | 204.920     | 892.98   | 1.06           | -1.39      | -1.88     | 1757457.97        | 14608516.88        | 40°13'25.785"N | 80°34'50.519"W | 2.33              | 233.553         | 0.48          | 0.06                 | 34.81               |
| 976.00  | 2.020           | 212.770     | 975.95   | 2.82           | -3.37      | -3.04     | 1757456.81        | 14608514.90        | 40°13'25.766"N | 80°34'50.534"W | 4.54              | 222.112         | 1.30          | 1.29                 | 8.44                |
| 1068.00 | 3.030           | 210.930     | 1067.86  | 5.87           | -6.82      | -5.17     | 1757454.68        | 14608511.46        | 40°13'25.732"N | 80°34'50.562"W | 8.56              | 217.186         | 1.10          | 1.10                 | -2.00               |
| 1161.00 | 3.530           | 215.940     | 1160.70  | 9.75           | -11.24     | -8.12     | 1757451.74        | 14608507.03        | 40°13'25.688"N | 80°34'50.600"W | 13.87             | 215.822         | 0.62          | 0.54                 | 5.39                |
| 1254.00 | 4.570           | 215.380     | 1253.47  | 14.38          | -16.58     | -11.94    | 1757447.91        | 14608501.69        | 40°13'25.636"N | 80°34'50.650"W | 20.43             | 215.758         | 1.12          | 1.12                 | -0.60               |
| 1347.00 | 5.980           | 212.900     | 1346.07  | 20.58          | -23.67     | -16.72    | 1757443.14        | 14608494.61        | 40°13'25.566"N | 80°34'50.712"W | 28.98             | 215.232         | 1.54          | 1.52                 | -2.67               |
| 1439.00 | 7.600           | 213.870     | 1437.43  | 28.54          | -32.75     | -22.71    | 1757437.15        | 14608485.54        | 40°13'25.476"N | 80°34'50.790"W | 39.85             | 214.744         | 1.77          | 1.76                 | 1.05                |
| 1532.00 | 9.420           | 216.650     | 1529.40  | 38.28          | -43.96     | -30.68    | 1757429.18        | 14608474.33        | 40°13'25.366"N | 80°34'50.893"W | 53.61             | 214.914         | 2.01          | 1.96                 | 2.99                |
| 1605.00 | 9.760           | 216.050     | 1601.38  | 46.75          | -53.76     | -37.89    | 1757421.97        | 14608464.54        | 40°13'25.269"N | 80°34'50.987"W | 65.77             | 215.179         | 0.49          | 0.47                 | -0.82               |
| 1723.00 | 8.930           | 209.350     | 1717.81  | 60.88          | -69.83     | -48.27    | 1757411.60        | 14608448.47        | 40°13'25.111"N | 80°34'51.121"W | 84.88             | 214.654         | 1.16          | -0.70                | -5.68               |
| 1816.00 | 9.010           | 211.960     | 1809.68  | 71.96          | -82.30     | -55.66    | 1757404.21        | 14608436.01        | 40°13'24.988"N | 80°34'51.217"W | 99.35             | 214.071         | 0.45          | 0.09                 | 2.81                |
| 1909.00 | 9.150           | 229.570     | 1901.53  | 81.21          | -93.27     | -65.14    | 1757394.73        | 14608425.03        | 40°13'24.880"N | 80°34'51.340"W | 113.77            | 214.932         | 2.98          | 0.15                 | 18.94               |
| 2002.00 | 11.260          | 246.450     | 1993.07  | 87.21          | -101.70    | -79.10    | 1757380.78        | 14608416.61        | 40°13'24.798"N | 80°34'51.521"W | 128.84            | 217.876         | 3.91          | 2.27                 | 18.15               |
| 2095.00 | 13.340          | 247.060     | 2083.93  | 91.91          | -109.51    | -97.31    | 1757362.58        | 14608408.80        | 40°13'24.721"N | 80°34'51.756"W | 146.49            | 221.624         | 2.24          | 2.24                 | 0.66                |
| 2187.00 | 14.470          | 247.830     | 2173.24  | 96.89          | -117.98    | -117.73   | 1757342.17        | 14608400.33        | 40°13'24.638"N | 80°34'52.020"W | 166.67            | 224.938         | 1.24          | 1.23                 | 0.84                |
| 2280.00 | 15.670          | 252.010     | 2263.04  | 101.28         | -126.25    | -140.43   | 1757319.47        | 14608392.07        | 40°13'24.558"N | 80°34'52.313"W | 188.84            | 228.045         | 1.74          | 1.29                 | 4.49                |
| 2373.00 | 17.550          | 257.360     | 2352.16  | 103.90         | -133.20    | -166.06   | 1757293.85        | 14608385.13        | 40°13'24.490"N | 80°34'52.644"W | 212.88            | 231.268         | 2.60          | 2.02                 | 5.75                |
| 2465.00 | 20.800          | 261.750     | 2439.05  | 104.29         | -138.58    | -195.77   | 1757264.15        | 14608379.75        | 40°13'24.439"N | 80°34'53.027"W | 239.86            | 234.708         | 3.86          | 3.53                 | 4.77                |
| 2558.00 | 24.160          | 264.720     | 2524.97  | 102.51         | -142.70    | -231.08   | 1757228.86        | 14608375.63        | 40°13'24.399"N | 80°34'53.482"W | 271.59            | 238.303         | 3.81          | 3.61                 | 3.19                |
| 2650.00 | 26.220          | 265.230     | 2608.22  | 99.44          | -146.12    | -270.08   | 1757189.87        | 14608372.21        | 40°13'24.367"N | 80°34'53.985"W | 307.08            | 241.586         | 2.25          | 2.24                 | 0.55                |
| 2743.00 | 27.640          | 266.030     | 2691.13  | 95.65          | -149.32    | -312.08   | 1757147.89        | 14608369.00        | 40°13'24.338"N | 80°34'54.527"W | 345.96            | 244.430         | 1.58          | 1.53                 | 0.86                |

# Actual Wellpath Report

John Good Jr BRK 206H AWP Proj: 15920'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
|----------|----------------------|----------|---------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2836.00 | 29.000          | 266.990     | 2773.00  | 91.01          | -152.00    | -356.11   | 1757103.87        | 14608366.33        | 40°13'24.313"N | 80°34'55.095"W | 387.20            | 246.886         | 1.54          | 1.46                 | 1.03                |
| 2929.00 | 30.750          | 272.140     | 2853.65  | 83.65          | -152.30    | -402.40   | 1757057.61        | 14608366.03        | 40°13'24.313"N | 80°34'55.692"W | 430.25            | 249.270         | 3.34          | 1.88                 | 5.54                |
| 3024.00 | 30.120          | 271.750     | 2935.56  | 74.08          | -150.66    | -450.49   | 1757009.53        | 14608367.67        | 40°13'24.331"N | 80°34'56.312"W | 475.02            | 251.508         | 0.69          | -0.66                | -0.41               |
| 3117.00 | 29.620          | 271.910     | 3016.21  | 64.96          | -149.18    | -496.78   | 1756963.26        | 14608369.14        | 40°13'24.348"N | 80°34'56.908"W | 518.70            | 253.285         | 0.54          | -0.54                | 0.17                |
| 3210.00 | 29.680          | 273.530     | 3097.03  | 55.21          | -147.00    | -542.74   | 1756917.32        | 14608371.33        | 40°13'24.371"N | 80°34'57.500"W | 562.29            | 254.845         | 0.86          | 0.06                 | 1.74                |
| 3303.00 | 29.220          | 270.930     | 3178.02  | 45.89          | -145.21    | -588.42   | 1756871.66        | 14608373.11        | 40°13'24.391"N | 80°34'58.089"W | 606.07            | 256.137         | 1.46          | -0.49                | -2.80               |
| 3396.00 | 30.970          | 271.230     | 3258.48  | 37.31          | -144.33    | -635.04   | 1756825.06        | 14608373.99        | 40°13'24.402"N | 80°34'58.690"W | 651.23            | 257.195         | 1.89          | 1.88                 | 0.32                |
| 3488.00 | 30.450          | 269.120     | 3337.58  | 29.40          | -144.18    | -682.02   | 1756778.10        | 14608374.14        | 40°13'24.406"N | 80°34'59.296"W | 697.09            | 258.063         | 1.30          | -0.57                | -2.29               |
| 3581.00 | 30.220          | 268.520     | 3417.84  | 22.58          | -145.15    | -728.97   | 1756731.16        | 14608373.18        | 40°13'24.398"N | 80°34'59.901"W | 743.28            | 258.739         | 0.41          | -0.25                | -0.65               |
| 3674.00 | 30.210          | 273.500     | 3498.22  | 14.04          | -144.32    | -775.73   | 1756684.42        | 14608374.00        | 40°13'24.409"N | 80°35'00.504"W | 789.04            | 259.461         | 2.69          | -0.01                | 5.35                |
| 3766.00 | 28.490          | 273.260     | 3578.41  | 3.97           | -141.66    | -820.75   | 1756639.42        | 14608376.66        | 40°13'24.437"N | 80°35'01.084"W | 832.88            | 260.207         | 1.87          | -1.87                | -0.26               |
| 3859.00 | 28.160          | 272.010     | 3660.28  | -5.33          | -139.63    | -864.82   | 1756595.36        | 14608378.69        | 40°13'24.459"N | 80°35'01.652"W | 876.02            | 260.828         | 0.73          | -0.35                | -1.34               |
| 3952.00 | 30.430          | 269.820     | 3741.38  | -13.54         | -138.94    | -910.31   | 1756549.89        | 14608379.39        | 40°13'24.468"N | 80°35'02.239"W | 920.85            | 261.322         | 2.70          | 2.44                 | -2.35               |
| 4044.00 | 29.680          | 265.820     | 3821.02  | -19.44         | -140.67    | -956.33   | 1756503.89        | 14608377.66        | 40°13'24.453"N | 80°35'02.832"W | 966.62            | 261.632         | 2.32          | -0.82                | -4.35               |
| 4137.00 | 27.420          | 266.250     | 3902.70  | -23.73         | -143.75    | -1000.67  | 1756459.57        | 14608374.58        | 40°13'24.425"N | 80°35'03.404"W | 1010.94           | 261.825         | 2.44          | -2.43                | 0.46                |
| 4230.00 | 27.170          | 270.690     | 3985.36  | -29.65         | -144.89    | -1043.27  | 1756416.98        | 14608373.43        | 40°13'24.416"N | 80°35'03.953"W | 1053.29           | 262.093         | 2.21          | -0.27                | 4.77                |
| 4322.00 | 27.820          | 273.380     | 4066.97  | -38.17         | -143.37    | -1085.71  | 1756374.56        | 14608374.95        | 40°13'24.432"N | 80°35'04.500"W | 1095.14           | 262.477         | 1.52          | 0.71                 | 2.92                |
| 4415.00 | 29.920          | 274.650     | 4148.41  | -48.69         | -140.21    | -1130.50  | 1756329.79        | 14608378.11        | 40°13'24.466"N | 80°35'05.077"W | 1139.16           | 262.930         | 2.35          | 2.26                 | 1.37                |
| 4508.00 | 33.830          | 273.880     | 4227.37  | -60.37         | -136.58    | -1179.46  | 1756280.84        | 14608381.74        | 40°13'24.504"N | 80°35'05.708"W | 1187.34           | 263.395         | 4.23          | 4.20                 | -0.83               |
| 4600.00 | 32.880          | 270.580     | 4304.22  | -70.69         | -134.60    | -1229.99  | 1756230.34        | 14608383.73        | 40°13'24.526"N | 80°35'06.360"W | 1237.33           | 263.755         | 2.23          | -1.03                | -3.59               |
| 4693.00 | 30.340          | 266.450     | 4383.42  | -77.56         | -135.79    | -1278.69  | 1756181.65        | 14608382.53        | 40°13'24.516"N | 80°35'06.987"W | 1285.88           | 263.938         | 3.59          | -2.73                | -4.44               |
| 4786.00 | 29.950          | 264.710     | 4463.85  | -81.72         | -139.39    | -1325.25  | 1756135.11        | 14608378.93        | 40°13'24.483"N | 80°35'07.588"W | 1332.56           | 263.996         | 1.03          | -0.42                | -1.87               |
| 4879.00 | 31.650          | 266.160     | 4543.73  | -85.84         | -143.16    | -1372.72  | 1756087.66        | 14608375.16        | 40°13'24.448"N | 80°35'08.200"W | 1380.16           | 264.046         | 1.99          | 1.83                 | 1.56                |
| 4972.00 | 32.050          | 266.610     | 4622.73  | -90.89         | -146.26    | -1421.69  | 1756038.71        | 14608372.07        | 40°13'24.420"N | 80°35'08.832"W | 1429.20           | 264.126         | 0.50          | 0.43                 | 0.48                |
| 5065.00 | 29.940          | 267.480     | 4702.44  | -96.36         | -148.74    | -1469.52  | 1755990.90        | 14608369.59        | 40°13'24.397"N | 80°35'09.448"W | 1477.02           | 264.221         | 2.32          | -2.27                | 0.94                |
| 5157.00 | 28.280          | 269.930     | 4782.82  | -102.73        | -149.77    | -1514.25  | 1755946.18        | 14608368.55        | 40°13'24.389"N | 80°35'10.025"W | 1521.64           | 264.351         | 2.22          | -1.80                | 2.66                |
| 5250.00 | 28.870          | 275.720     | 4864.51  | -112.26        | -147.56    | -1558.63  | 1755901.82        | 14608370.77        | 40°13'24.413"N | 80°35'10.597"W | 1565.60           | 264.592         | 3.04          | 0.63                 | 6.23                |
| 5312.00 | 29.830          | 277.630     | 4918.55  | -120.74        | -144.02    | -1588.81  | 1755871.65        | 14608374.30        | 40°13'24.449"N | 80°35'10.986"W | 1595.32           | 264.820         | 2.16          | 1.55                 | 3.08                |
| 5406.00 | 32.200          | 275.270     | 4999.11  | -134.03        | -138.62    | -1636.93  | 1755823.55        | 14608379.71        | 40°13'24.505"N | 80°35'11.606"W | 1642.79           | 265.160         | 2.83          | 2.52                 | -2.51               |
| 5499.00 | 32.290          | 275.030     | 5077.77  | -146.59        | -134.16    | -1686.35  | 1755774.15        | 14608384.16        | 40°13'24.551"N | 80°35'12.243"W | 1691.68           | 265.451         | 0.17          | 0.10                 | -0.26               |



# Actual Wellpath Report

John Good Jr BRK 206H AWP Proj: 15920  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
|----------|----------------------|----------|---------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5592.00 | 31.650          | 276.720     | 5156.66  | -159.66        | -129.13    | -1735.33  | 1755725.19        | 14608389.19        | 40°13'24.603"N | 80°35'12.874"W | 1740.12           | 265.744         | 1.18          | -0.69                | 1.82                |
| 5685.00 | 32.440          | 274.670     | 5235.49  | -172.60        | -124.24    | -1784.42  | 1755676.12        | 14608394.07        | 40°13'24.654"N | 80°35'13.506"W | 1788.74           | 266.017         | 1.45          | 0.85                 | -2.20               |
| 5731.00 | 31.620          | 263.930     | 5274.52  | -176.35        | -124.51    | -1808.73  | 1755651.82        | 14608393.80        | 40°13'24.652"N | 80°35'13.820"W | 1813.01           | 266.062         | 12.50         | -1.78                | -23.35              |
| 5777.00 | 30.370          | 251.800     | 5313.99  | -175.32        | -129.43    | -1831.79  | 1755628.77        | 14608388.89        | 40°13'24.605"N | 80°35'14.117"W | 1836.36           | 265.958         | 13.83         | -2.72                | -26.37              |
| 5824.00 | 28.710          | 240.410     | 5354.92  | -169.65        | -138.72    | -1852.91  | 1755607.65        | 14608379.60        | 40°13'24.514"N | 80°35'14.390"W | 1858.10           | 265.718         | 12.44         | -3.53                | -24.23              |
| 5870.00 | 27.320          | 232.960     | 5395.54  | -160.98        | -150.54    | -1870.95  | 1755589.62        | 14608367.79        | 40°13'24.398"N | 80°35'14.624"W | 1877.00           | 265.400         | 8.18          | -3.02                | -16.20              |
| 5917.00 | 26.390          | 228.600     | 5437.47  | -150.47        | -163.94    | -1887.40  | 1755573.18        | 14608354.39        | 40°13'24.266"N | 80°35'14.836"W | 1894.51           | 265.036         | 4.63          | -1.98                | -9.28               |
| 5963.00 | 27.080          | 227.500     | 5478.55  | -139.37        | -177.78    | -1902.79  | 1755557.80        | 14608340.56        | 40°13'24.130"N | 80°35'15.036"W | 1911.07           | 264.662         | 1.85          | 1.50                 | -2.39               |
| 6009.00 | 31.450          | 221.110     | 5518.68  | -126.05        | -193.91    | -1918.41  | 1755542.18        | 14608324.44        | 40°13'23.972"N | 80°35'15.238"W | 1928.18           | 264.228         | 11.67         | 9.50                 | -13.89              |
| 6056.00 | 33.930          | 212.890     | 5558.26  | -108.58        | -214.17    | -1933.60  | 1755526.99        | 14608304.18        | 40°13'23.772"N | 80°35'15.435"W | 1945.43           | 263.679         | 10.81         | 5.28                 | -17.49              |
| 6102.00 | 36.490          | 203.160     | 5595.87  | -87.57         | -237.55    | -1945.97  | 1755514.64        | 14608280.81        | 40°13'23.542"N | 80°35'15.596"W | 1960.41           | 263.040         | 13.39         | 5.57                 | -21.15              |
| 6148.00 | 37.920          | 197.560     | 5632.51  | -63.46         | -263.61    | -1955.61  | 1755504.99        | 14608254.76        | 40°13'23.284"N | 80°35'15.722"W | 1973.30           | 262.323         | 7.99          | 3.11                 | -12.17              |
| 6195.00 | 41.700          | 192.710     | 5668.62  | -36.12         | -292.65    | -1963.42  | 1755497.19        | 14608225.74        | 40°13'22.998"N | 80°35'15.824"W | 1985.10           | 261.522         | 10.40         | 8.04                 | -10.32              |
| 6241.00 | 45.350          | 191.240     | 5701.97  | -6.64          | -323.63    | -1969.97  | 1755490.64        | 14608194.76        | 40°13'22.692"N | 80°35'15.910"W | 1996.38           | 260.671         | 8.23          | 7.93                 | -3.20               |
| 6288.00 | 50.480          | 188.360     | 5733.46  | 26.27          | -357.99    | -1975.87  | 1755484.74        | 14608160.42        | 40°13'22.353"N | 80°35'15.989"W | 2008.04           | 259.730         | 11.82         | 10.91                | -6.13               |
| 6334.00 | 55.570          | 184.750     | 5761.13  | 61.57          | -394.48    | -1980.03  | 1755480.59        | 14608123.94        | 40°13'21.992"N | 80°35'16.044"W | 2018.94           | 258.732         | 12.72         | 11.07                | -7.85               |
| 6380.00 | 62.190          | 179.350     | 5784.90  | 100.12         | -433.80    | -1981.37  | 1755479.25        | 14608084.64        | 40°13'21.604"N | 80°35'16.064"W | 2028.30           | 257.651         | 17.55         | 14.39                | -11.74              |
| 6427.00 | 66.380          | 175.890     | 5805.29  | 142.12         | -476.09    | -1979.59  | 1755481.03        | 14608042.37        | 40°13'21.186"N | 80°35'16.044"W | 2036.03           | 256.477         | 11.11         | 8.91                 | -7.36               |
| 6473.00 | 68.190          | 171.420     | 5823.06  | 184.47         | -518.24    | -1974.89  | 1755485.72        | 14608000.23        | 40°13'20.769"N | 80°35'15.986"W | 2041.76           | 255.296         | 9.79          | 3.93                 | -9.72               |
| 6519.00 | 72.440          | 167.670     | 5838.56  | 227.76         | -560.81    | -1967.02  | 1755493.59        | 14607957.67        | 40°13'20.348"N | 80°35'15.887"W | 2045.40           | 254.087         | 12.01         | 9.24                 | -8.15               |
| 6566.00 | 74.520          | 164.760     | 5851.93  | 272.69         | -604.56    | -1956.27  | 1755504.33        | 14607913.94        | 40°13'19.915"N | 80°35'15.751"W | 2047.56           | 252.827         | 7.40          | 4.43                 | -6.19               |
| 6612.00 | 74.390          | 164.210     | 5864.26  | 316.76         | -647.27    | -1944.42  | 1755516.18        | 14607871.25        | 40°13'19.493"N | 80°35'15.600"W | 2049.32           | 251.588         | 1.19          | -0.28                | -1.20               |
| 6658.00 | 78.920          | 163.140     | 5874.87  | 361.19         | -690.21    | -1931.84  | 1755528.76        | 14607828.33        | 40°13'19.068"N | 80°35'15.441"W | 2051.44           | 250.339         | 10.10         | 9.85                 | -2.33               |
| 6704.00 | 83.090          | 162.380     | 5882.06  | 406.20         | -733.59    | -1918.37  | 1755542.22        | 14607784.96        | 40°13'18.638"N | 80°35'15.270"W | 2053.85           | 249.073         | 9.21          | 9.07                 | -1.65               |
| 6797.00 | 87.880          | 161.970     | 5889.38  | 497.92         | -821.82    | -1890.00  | 1755570.58        | 14607696.76        | 40°13'17.765"N | 80°35'14.909"W | 2060.95           | 246.499         | 5.17          | 5.15                 | -0.44               |
| 6890.00 | 89.320          | 159.230     | 5891.65  | 589.50         | -909.51    | -1859.12  | 1755601.44        | 14607609.11        | 40°13'16.897"N | 80°35'14.517"W | 2069.67           | 243.932         | 3.33          | 1.55                 | -2.95               |
| 6982.00 | 89.260          | 156.040     | 5892.79  | 679.18         | -994.57    | -1824.12  | 1755636.43        | 14607524.08        | 40°13'16.055"N | 80°35'14.070"W | 2077.64           | 241.399         | 3.47          | -0.07                | -3.47               |
| 7075.00 | 89.260          | 153.610     | 5893.99  | 768.71         | -1078.72   | -1784.57  | 1755675.97        | 14607439.96        | 40°13'15.222"N | 80°35'13.566"W | 2085.27           | 238.848         | 2.61          | 0.00                 | -2.61               |
| 7168.00 | 89.170          | 153.030     | 5895.27  | 857.56         | -1161.81   | -1742.82  | 1755717.71        | 14607356.91        | 40°13'14.399"N | 80°35'13.032"W | 2094.57           | 236.311         | 0.63          | -0.10                | -0.62               |
| 7261.00 | 89.200          | 153.490     | 5896.59  | 946.39         | -1244.86   | -1700.98  | 1755759.53        | 14607273.89        | 40°13'13.576"N | 80°35'12.498"W | 2107.84           | 233.802         | 0.50          | 0.03                 | 0.49                |

# Actual Wellpath Report

John Good Jr BRK 206H AWP Proj: 15920  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
|----------|----------------------|----------|---------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 7353.00  | 89.170          | 154.640     | 5897.90  | 1034.63        | -1327.58   | -1660.74  | 1755799.75        | 14607191.20        | 40°13'12.757"N | 80°35'11.984"W | 2126.16           | 231.362         | 1.25          | -0.03                | 1.25                |
| 7446.00  | 89.140          | 155.490     | 5899.27  | 1124.27        | -1411.90   | -1621.54  | 1755838.94        | 14607106.91        | 40°13'11.922"N | 80°35'11.484"W | 2150.09           | 228.953         | 0.91          | -0.03                | 0.91                |
| 7539.00  | 89.230          | 156.910     | 5900.59  | 1214.38        | -1496.98   | -1584.02  | 1755876.45        | 14607021.86        | 40°13'11.079"N | 80°35'11.005"W | 2179.47           | 226.618         | 1.53          | 0.10                 | 1.53                |
| 7632.00  | 89.260          | 158.050     | 5901.82  | 1304.99        | -1582.88   | -1548.40  | 1755912.05        | 14606936.00        | 40°13'10.229"N | 80°35'10.551"W | 2214.29           | 224.369         | 1.23          | 0.03                 | 1.23                |
| 7725.00  | 89.200          | 159.350     | 5903.07  | 1396.02        | -1669.52   | -1514.62  | 1755945.81        | 14606849.39        | 40°13'09.371"N | 80°35'10.121"W | 2254.19           | 222.215         | 1.40          | -0.06                | 1.40                |
| 7818.00  | 89.200          | 160.290     | 5904.37  | 1487.41        | -1756.80   | -1482.54  | 1755977.88        | 14606762.15        | 40°13'08.507"N | 80°35'09.713"W | 2298.76           | 220.161         | 1.01          | 0.00                 | 1.01                |
| 7910.00  | 89.200          | 160.450     | 5905.65  | 1577.97        | -1843.45   | -1451.64  | 1756008.77        | 14606675.53        | 40°13'07.650"N | 80°35'09.320"W | 2346.39           | 218.219         | 0.17          | 0.00                 | 0.17                |
| 8003.00  | 89.260          | 161.710     | 5906.90  | 1669.71        | -1931.41   | -1421.49  | 1756038.91        | 14606587.60        | 40°13'06.779"N | 80°35'08.936"W | 2398.12           | 216.352         | 1.36          | 0.06                 | 1.35                |
| 8096.00  | 89.140          | 159.800     | 5908.20  | 1761.36        | -2019.20   | -1390.84  | 1756069.55        | 14606499.85        | 40°13'05.910"N | 80°35'08.547"W | 2451.86           | 214.559         | 2.06          | -0.13                | 2.05                |
| 8189.00  | 89.260          | 157.600     | 5909.50  | 1852.39        | -2105.84   | -1357.06  | 1756103.31        | 14606413.25        | 40°13'05.052"N | 80°35'08.116"W | 2505.23           | 212.799         | 2.37          | 0.13                 | 2.37                |
| 8281.00  | 89.200          | 156.770     | 5910.74  | 1941.91        | -2190.63   | -1321.39  | 1756138.97        | 14606328.49        | 40°13'04.213"N | 80°35'07.662"W | 2558.31           | 211.098         | 0.90          | -0.07                | -0.90               |
| 8374.00  | 89.170          | 156.070     | 5912.06  | 2032.12        | -2275.86   | -1284.19  | 1756176.15        | 14606243.29        | 40°13'03.369"N | 80°35'07.187"W | 2613.17           | 209.435         | 0.75          | -0.03                | -0.75               |
| 8466.00  | 89.200          | 155.970     | 5913.37  | 2121.19        | -2359.91   | -1246.81  | 1756213.53        | 14606159.27        | 40°13'02.537"N | 80°35'06.710"W | 2669.02           | 207.849         | 0.11          | 0.03                 | -0.11               |
| 8559.00  | 89.200          | 158.280     | 5914.67  | 2211.66        | -2445.58   | -1210.66  | 1756249.66        | 14606073.64        | 40°13'01.688"N | 80°35'06.250"W | 2728.84           | 206.337         | 2.48          | 0.00                 | 2.48                |
| 8652.00  | 89.050          | 158.700     | 5916.09  | 2302.63        | -2532.09   | -1176.57  | 1756283.74        | 14605987.16        | 40°13'00.832"N | 80°35'05.815"W | 2792.09           | 204.922         | 0.48          | -0.16                | 0.45                |
| 8745.00  | 89.140          | 157.790     | 5917.55  | 2393.50        | -2618.46   | -1142.10  | 1756318.19        | 14605900.83        | 40°12'59.977"N | 80°35'05.376"W | 2856.69           | 203.566         | 0.98          | 0.10                 | -0.98               |
| 8837.00  | 89.080          | 158.400     | 5918.98  | 2483.35        | -2703.80   | -1107.78  | 1756352.50        | 14605815.51        | 40°12'59.132"N | 80°35'04.939"W | 2921.94           | 202.280         | 0.67          | -0.07                | 0.66                |
| 8930.00  | 89.110          | 158.470     | 5920.45  | 2574.29        | -2790.28   | -1073.60  | 1756386.66        | 14605729.07        | 40°12'58.276"N | 80°35'04.504"W | 2989.70           | 201.045         | 0.08          | 0.03                 | 0.08                |
| 9023.00  | 89.010          | 159.850     | 5921.98  | 2665.47        | -2877.18   | -1040.52  | 1756419.73        | 14605642.20        | 40°12'57.415"N | 80°35'04.083"W | 3059.56           | 199.882         | 1.49          | -0.11                | 1.48                |
| 9116.00  | 89.080          | 157.400     | 5923.53  | 2756.46        | -2963.77   | -1006.63  | 1756453.60        | 14605555.65        | 40°12'56.558"N | 80°35'03.651"W | 3130.05           | 198.760         | 2.64          | 0.08                 | -2.63               |
| 9205.00  | 89.200          | 156.640     | 5924.86  | 2843.01        | -3045.70   | -971.89   | 1756488.33        | 14605473.75        | 40°12'55.747"N | 80°35'03.208"W | 3197.00           | 197.698         | 0.86          | 0.13                 | -0.85               |
| 9298.00  | 89.230          | 156.120     | 5926.14  | 2933.20        | -3130.90   | -934.63   | 1756525.58        | 14605388.58        | 40°12'54.903"N | 80°35'02.733"W | 3267.42           | 196.621         | 0.56          | 0.03                 | -0.56               |
| 9391.00  | 89.230          | 155.860     | 5927.39  | 3023.23        | -3215.84   | -896.80   | 1756563.40        | 14605303.67        | 40°12'54.062"N | 80°35'02.250"W | 3338.55           | 195.582         | 0.28          | 0.00                 | -0.28               |
| 9483.00  | 89.110          | 156.900     | 5928.72  | 3112.45        | -3300.12   | -859.94   | 1756600.24        | 14605219.42        | 40°12'53.228"N | 80°35'01.780"W | 3410.33           | 194.605         | 1.14          | -0.13                | 1.13                |
| 9576.00  | 89.140          | 159.610     | 5930.14  | 3203.32        | -3386.49   | -825.49   | 1756634.68        | 14605133.09        | 40°12'52.372"N | 80°35'01.342"W | 3485.65           | 193.699         | 2.91          | 0.03                 | 2.91                |
| 9669.00  | 89.200          | 159.870     | 5931.49  | 3294.68        | -3473.73   | -793.29   | 1756666.87        | 14605045.89        | 40°12'51.509"N | 80°35'00.932"W | 3563.16           | 192.864         | 0.29          | 0.06                 | 0.28                |
| 9761.00  | 89.080          | 159.570     | 5932.87  | 3385.05        | -3560.01   | -761.41   | 1756698.74        | 14604959.63        | 40°12'50.655"N | 80°35'00.526"W | 3640.53           | 192.072         | 0.35          | -0.13                | -0.33               |
| 9854.00  | 89.350          | 160.840     | 5934.14  | 3476.55        | -3647.51   | -729.92   | 1756730.22        | 14604872.17        | 40°12'49.789"N | 80°35'00.125"W | 3719.82           | 191.316         | 1.40          | 0.29                 | 1.37                |
| 9947.00  | 89.480          | 162.190     | 5935.09  | 3568.41        | -3735.70   | -700.43   | 1756759.69        | 14604784.01        | 40°12'48.916"N | 80°34'59.751"W | 3800.80           | 190.619         | 1.46          | 0.14                 | 1.45                |
| 10039.00 | 89.450          | 159.960     | 5935.95  | 3659.16        | -3822.72   | -670.60   | 1756789.51        | 14604697.03        | 40°12'48.055"N | 80°34'59.371"W | 3881.09           | 189.950         | 2.42          | -0.03                | -2.42               |

## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 stations)

| MD       | 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] |
|----------|-----------------|-------------|----------|-----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 10132.00 | 89.540          | 158.490     | 5936.77  | 3750.37         | -3909.67   | -637.61   | 1756822.48        | 14604610.11        | 40°12'47.194"N | 80°34'58.952"W | 3961.32           | 189.263         | 1.58          | 0.10                 | -1.58               |
| 10225.00 | 89.480          | 155.320     | 5937.57  | 3840.75         | -3995.20   | -601.14   | 1756858.94        | 14604524.61        | 40°12'46.347"N | 80°34'58.487"W | 4040.17           | 188.557         | 3.41          | -0.06                | -3.41               |
| 10317.00 | 89.380          | 158.580     | 5938.48  | 3930.18         | -4079.84   | -565.12   | 1756894.95        | 14604440.01        | 40°12'45.509"N | 80°34'58.027"W | 4118.79           | 187.886         | 3.54          | -0.11                | 3.54                |
| 10410.00 | 89.380          | 155.350     | 5939.49  | 4020.59         | -4165.41   | -528.74   | 1756931.31        | 14604354.47        | 40°12'44.662"N | 80°34'57.564"W | 4198.83           | 187.234         | 3.47          | 0.00                 | -3.47               |
| 10503.00 | 89.480          | 151.430     | 5940.42  | 4109.46         | -4248.54   | -487.09   | 1756972.94        | 14604271.37        | 40°12'43.838"N | 80°34'57.032"W | 4276.37           | 186.540         | 4.22          | 0.11                 | -4.22               |
| 10596.00 | 89.450          | 154.590     | 5941.28  | 4198.16         | -4331.39   | -444.89   | 1757015.13        | 14604188.55        | 40°12'43.017"N | 80°34'56.493"W | 4354.18           | 185.865         | 3.40          | -0.03                | 3.40                |
| 10689.00 | 89.450          | 156.820     | 5942.18  | 4288.07         | -4416.15   | -406.64   | 1757053.37        | 14604103.83        | 40°12'42.178"N | 80°34'56.005"W | 4434.83           | 185.261         | 2.40          | 0.00                 | 2.40                |
| 10781.00 | 89.450          | 156.780     | 5943.06  | 4377.46         | -4500.70   | -370.39   | 1757089.60        | 14604019.30        | 40°12'41.341"N | 80°34'55.543"W | 4515.92           | 184.705         | 0.04          | 0.00                 | -0.04               |
| 10874.00 | 89.480          | 157.250     | 5943.93  | 4467.90         | -4586.32   | -334.08   | 1757125.90        | 14603933.72        | 40°12'40.493"N | 80°34'55.080"W | 4598.47           | 184.166         | 0.51          | 0.03                 | 0.51                |
| 10967.00 | 89.230          | 158.210     | 5944.98  | 4558.60         | -4672.37   | -298.84   | 1757161.13        | 14603847.70        | 40°12'39.641"N | 80°34'54.631"W | 4681.92           | 183.660         | 1.07          | -0.27                | 1.03                |
| 11060.00 | 89.200          | 159.340     | 5946.25  | 4649.66         | -4759.06   | -265.17   | 1757194.78        | 14603761.05        | 40°12'38.783"N | 80°34'54.203"W | 4766.44           | 183.189         | 1.22          | -0.03                | 1.22                |
| 11152.00 | 89.230          | 160.560     | 5947.51  | 4740.10         | -4845.47   | -233.64   | 1757226.30        | 14603674.67        | 40°12'37.928"N | 80°34'53.801"W | 4851.10           | 182.761         | 1.33          | 0.03                 | 1.33                |
| 11245.00 | 89.140          | 162.180     | 5948.83  | 4831.91         | -4933.58   | -203.93   | 1757256.00        | 14603586.59        | 40°12'37.055"N | 80°34'53.424"W | 4937.80           | 182.367         | 1.74          | -0.10                | 1.74                |
| 11338.00 | 89.170          | 161.050     | 5950.20  | 4923.79         | -5021.83   | -174.60   | 1757285.32        | 14603498.38        | 40°12'36.182"N | 80°34'53.051"W | 5024.86           | 181.991         | 1.22          | 0.03                 | -1.22               |
| 11431.00 | 89.230          | 156.770     | 5951.50  | 5014.87         | -5108.57   | -141.15   | 1757318.76        | 14603411.67        | 40°12'35.323"N | 80°34'52.625"W | 5110.52           | 181.583         | 4.60          | 0.06                 | -4.60               |
| 11523.00 | 89.140          | 152.740     | 5952.81  | 5103.40         | -5191.76   | -101.92   | 1757357.97        | 14603328.52        | 40°12'34.499"N | 80°34'52.125"W | 5192.76           | 181.125         | 4.38          | -0.10                | -4.38               |
| 11616.00 | 89.200          | 152.310     | 5954.16  | 5191.86         | -5274.26   | -59.02    | 1757400.85        | 14603246.05        | 40°12'33.682"N | 80°34'51.577"W | 5274.59           | 180.641         | 0.47          | 0.06                 | -0.46               |
| 11709.00 | 89.170          | 155.950     | 5955.48  | 5281.07         | -5357.92   | -18.45    | 1757441.40        | 14603162.42        | 40°12'32.854"N | 80°34'51.059"W | 5357.95           | 180.197         | 3.91          | -0.03                | 3.91                |
| 11802.00 | 89.170          | 158.690     | 5956.83  | 5371.61         | -5443.71   | 17.40     | 1757477.24        | 14603076.67        | 40°12'32.004"N | 80°34'50.602"W | 5443.74           | 179.817         | 2.95          | 0.00                 | 2.95                |
| 11895.00 | 89.170          | 160.260     | 5958.18  | 5462.89         | -5530.79   | 50.00     | 1757509.83        | 14602989.61        | 40°12'31.142"N | 80°34'50.187"W | 5531.02           | 179.482         | 1.69          | 0.00                 | 1.69                |
| 11988.00 | 89.080          | 160.350     | 5959.60  | 5554.42         | -5618.34   | 81.34     | 1757541.63        | 14602902.10        | 40°12'30.275"N | 80°34'49.789"W | 5618.93           | 179.171         | 0.14          | -0.10                | 0.10                |
| 12080.00 | 89.200          | 160.940     | 5960.98  | 5645.06         | -5705.13   | 111.83    | 1757571.63        | 14602815.34        | 40°12'29.416"N | 80°34'49.416"W | 5706.23           | 178.877         | 0.65          | 0.13                 | 0.64                |
| 12173.00 | 89.230          | 160.990     | 5962.25  | 5736.77         | -5793.04   | 142.16    | 1757601.95        | 14602727.47        | 40°12'28.546"N | 80°34'49.015"W | 5794.78           | 178.594         | 0.06          | 0.03                 | 0.05                |
| 12266.00 | 89.080          | 157.800     | 5963.63  | 5828.01         | -5880.07   | 174.88    | 1757634.66        | 14602640.47        | 40°12'27.685"N | 80°34'48.599"W | 5882.67           | 178.296         | 3.43          | -0.16                | -3.43               |
| 12359.00 | 89.170          | 156.990     | 5965.05  | 5918.58         | -5965.91   | 210.62    | 1757670.39        | 14602554.66        | 40°12'26.835"N | 80°34'48.144"W | 5969.63           | 177.978         | 0.88          | 0.10                 | -0.87               |
| 12452.00 | 89.170          | 155.780     | 5966.39  | 6008.77         | -6051.11   | 247.87    | 1757707.62        | 14602469.49        | 40°12'25.991"N | 80°34'47.689"W | 6056.19           | 177.654         | 1.30          | 0.00                 | -1.30               |
| 12545.00 | 89.140          | 157.450     | 5967.76  | 6099.05         | -6136.46   | 284.78    | 1757744.52        | 14602384.18        | 40°12'25.146"N | 80°34'47.198"W | 6143.07           | 177.343         | 1.80          | -0.03                | 1.80                |
| 12637.00 | 89.110          | 157.900     | 5969.17  | 6188.75         | -6221.56   | 319.72    | 1757779.45        | 14602299.12        | 40°12'24.303"N | 80°34'46.753"W | 6229.77           | 177.058         | 0.49          | -0.03                | 0.49                |
| 12730.00 | 89.200          | 157.230     | 5970.54  | 6279.39         | -6307.51   | 355.21    | 1757814.92        | 14602213.20        | 40°12'23.452"N | 80°34'46.301"W | 6317.50           | 176.777         | 0.73          | 0.10                 | -0.72               |
| 12823.00 | 89.140          | 158.940     | 5971.89  | 6370.21         | -6393.78   | 389.91    | 1757849.61        | 14602126.96        | 40°12'22.598"N | 80°34'45.859"W | 6405.65           | 176.510         | 1.84          | -0.06                | 1.84                |

## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 12915.00 | 89.570          | 156.480     | 5972.92  | 6459.92        | -6478.89   | 424.80    | 1757884.49        | 14602041.88        | 40°12'21.756"N | 80°34'45.414"W | 6492.80           | 176.249         | 2.71          | 0.47                 | -2.67               |
| 13008.00 | 89.380          | 156.380     | 5973.78  | 6550.13        | -6564.13   | 461.99    | 1757921.66        | 14601956.68        | 40°12'20.912"N | 80°34'44.940"W | 6580.36           | 175.974         | 0.23          | -0.20                | -0.11               |
| 13101.00 | 89.450          | 156.270     | 5974.73  | 6640.31        | -6649.29   | 499.33    | 1757958.99        | 14601871.54        | 40°12'20.068"N | 80°34'44.464"W | 6668.02           | 175.705         | 0.14          | 0.08                 | -0.12               |
| 13194.00 | 89.510          | 161.490     | 5975.57  | 6731.37        | -6736.01   | 532.83    | 1757992.47        | 14601784.86        | 40°12'19.210"N | 80°34'44.038"W | 6757.05           | 175.477         | 5.61          | 0.06                 | 5.61                |
| 13286.00 | 89.450          | 161.080     | 5976.41  | 6822.18        | -6823.15   | 562.35    | 1758021.98        | 14601697.76        | 40°12'18.347"N | 80°34'43.663"W | 6846.28           | 175.288         | 0.45          | -0.07                | -0.45               |
| 13379.00 | 89.570          | 157.830     | 5977.20  | 6913.45        | -6910.22   | 594.98    | 1758054.60        | 14601610.72        | 40°12'17.485"N | 80°34'43.247"W | 6935.78           | 175.079         | 3.50          | 0.13                 | -3.49               |
| 13472.00 | 89.380          | 157.350     | 5978.05  | 7004.10        | -6996.19   | 630.43    | 1758090.04        | 14601524.78        | 40°12'16.634"N | 80°34'42.796"W | 7024.54           | 174.851         | 0.56          | -0.20                | -0.52               |
| 13565.00 | 89.600          | 159.030     | 5978.88  | 7094.97        | -7082.53   | 664.98    | 1758124.57        | 14601438.48        | 40°12'15.779"N | 80°34'42.356"W | 7113.67           | 174.636         | 1.82          | 0.24                 | 1.81                |
| 13658.00 | 89.600          | 159.920     | 5979.53  | 7186.25        | -7169.62   | 697.59    | 1758157.17        | 14601351.42        | 40°12'14.917"N | 80°34'41.941"W | 7203.48           | 174.443         | 0.96          | 0.00                 | 0.96                |
| 13751.00 | 89.570          | 159.240     | 5980.20  | 7277.57        | -7256.77   | 730.03    | 1758189.60        | 14601264.30        | 40°12'14.054"N | 80°34'41.528"W | 7293.40           | 174.255         | 0.73          | -0.03                | -0.73               |
| 13843.00 | 89.540          | 158.400     | 5980.92  | 7367.73        | -7342.65   | 763.02    | 1758222.57        | 14601178.45        | 40°12'13.204"N | 80°34'41.108"W | 7382.19           | 174.067         | 0.54          | -0.03                | -0.54               |
| 13936.00 | 89.540          | 158.930     | 5981.66  | 7458.81        | -7429.38   | 796.59    | 1758256.14        | 14601091.76        | 40°12'12.346"N | 80°34'40.681"W | 7471.96           | 173.880         | 0.20          | 0.00                 | 0.20                |
| 14029.00 | 89.510          | 156.480     | 5982.44  | 7549.50        | -7515.41   | 831.87    | 1758291.40        | 14601005.76        | 40°12'11.494"N | 80°34'40.231"W | 7561.31           | 173.684         | 2.63          | -0.03                | -2.63               |
| 14122.00 | 89.570          | 155.030     | 5983.18  | 7639.44        | -7600.21   | 870.06    | 1758329.57        | 14600921.00        | 40°12'10.654"N | 80°34'39.745"W | 7649.85           | 173.469         | 1.56          | 0.06                 | -1.56               |
| 14215.00 | 89.510          | 154.840     | 5983.93  | 7729.03        | -7684.45   | 909.46    | 1758368.96        | 14600836.79        | 40°12'09.820"N | 80°34'39.242"W | 7738.08           | 173.250         | 0.21          | -0.06                | -0.20               |
| 14307.00 | 89.320          | 156.810     | 5984.87  | 7818.03        | -7768.37   | 947.13    | 1758406.61        | 14600752.90        | 40°12'08.989"N | 80°34'38.762"W | 7825.89           | 173.049         | 2.15          | -0.21                | 2.14                |
| 14400.00 | 89.320          | 158.860     | 5985.97  | 7908.76        | -7854.49   | 982.21    | 1758441.68        | 14600666.82        | 40°12'08.136"N | 80°34'38.315"W | 7915.66           | 172.872         | 2.20          | 0.00                 | 2.20                |
| 14493.00 | 89.290          | 158.730     | 5987.10  | 7999.83        | -7941.18   | 1015.85   | 1758475.31        | 14600580.16        | 40°12'07.278"N | 80°34'37.887"W | 8005.89           | 172.710         | 0.14          | -0.03                | -0.14               |
| 14586.00 | 89.290          | 160.830     | 5988.25  | 8091.20        | -8028.44   | 1047.99   | 1758507.43        | 14600492.93        | 40°12'06.414"N | 80°34'37.478"W | 8096.55           | 172.563         | 2.26          | 0.00                 | 2.26                |
| 14679.00 | 89.320          | 159.150     | 5989.38  | 8182.64        | -8115.82   | 1079.81   | 1758539.24        | 14600405.59        | 40°12'05.549"N | 80°34'37.073"W | 8187.33           | 172.421         | 1.81          | 0.03                 | -1.81               |
| 14771.00 | 89.350          | 157.430     | 5990.45  | 8272.55        | -8201.28   | 1113.84   | 1758573.26        | 14600320.16        | 40°12'04.703"N | 80°34'36.640"W | 8276.57           | 172.266         | 1.87          | 0.03                 | -1.87               |
| 14864.00 | 89.290          | 157.310     | 5991.55  | 8363.12        | -8287.11   | 1149.62   | 1758609.02        | 14600234.36        | 40°12'03.853"N | 80°34'36.184"W | 8366.47           | 172.102         | 0.14          | -0.06                | -0.13               |
| 14957.00 | 89.320          | 156.500     | 5992.68  | 8453.52        | -8372.65   | 1186.09   | 1758645.49        | 14600148.85        | 40°12'03.006"N | 80°34'35.719"W | 8456.25           | 171.937         | 0.87          | 0.03                 | -0.87               |
| 15050.00 | 89.260          | 157.600     | 5993.83  | 8543.96        | -8458.28   | 1222.35   | 1758681.73        | 14600063.25        | 40°12'02.158"N | 80°34'35.257"W | 8546.15           | 171.777         | 1.18          | -0.06                | 1.18                |
| 15142.00 | 89.320          | 157.190     | 5994.97  | 8633.57        | -8543.21   | 1257.71   | 1758717.08        | 14599978.36        | 40°12'01.317"N | 80°34'34.807"W | 8635.29           | 171.625         | 0.45          | 0.07                 | -0.45               |
| 15232.00 | 89.290          | 156.370     | 5996.06  | 8721.00        | -8625.91   | 1293.19   | 1758752.55        | 14599895.69        | 40°12'00.498"N | 80°34'34.354"W | 8722.31           | 171.474         | 0.91          | -0.03                | -0.91               |
| 15325.00 | 89.630          | 155.700     | 5996.94  | 8811.06        | -8710.89   | 1330.97   | 1758790.30        | 14599810.74        | 40°11'59.657"N | 80°34'33.873"W | 8811.99           | 171.313         | 0.81          | 0.37                 | -0.72               |
| 15418.00 | 90.000          | 158.830     | 5997.24  | 8901.58        | -8796.65   | 1366.90   | 1758826.23        | 14599725.01        | 40°11'58.807"N | 80°34'33.415"W | 8902.22           | 171.167         | 3.39          | 0.40                 | 3.37                |
| 15511.00 | 90.980          | 156.870     | 5996.45  | 8992.32        | -8882.78   | 1401.96   | 1758861.27        | 14599638.92        | 40°11'57.955"N | 80°34'32.968"W | 8992.74           | 171.031         | 2.36          | 1.05                 | -2.11               |
| 15603.00 | 90.520          | 159.220     | 5995.24  | 9082.15        | -8968.10   | 1436.36   | 1758895.65        | 14599553.64        | 40°11'57.110"N | 80°34'32.531"W | 9082.39           | 170.901         | 2.60          | -0.50                | 2.55                |

## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

## WELLPATH DATA (184 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 15696.00 | 90.550          | 156.810     | 5994.37  | 9172.95        | -9054.32   | 1471.17   | 1758930.45        | 14599467.44        | 40°11'56.256"N | 80°34'32.087"W | 9173.07           | 170.771         | 2.59          | 0.03                 | -2.59               |
| 15789.00 | 90.550          | 156.630     | 5993.48  | 9263.27        | -9139.75   | 1507.92   | 1758967.19        | 14599382.05        | 40°11'55.410"N | 80°34'31.619"W | 9263.31           | 170.631         | 0.19          | 0.00                 | -0.19               |
| 15896.00 | 90.460          | 157.950     | 5992.54  | 9367.44        | -9238.45   | 1549.23   | 1759008.48        | 14599283.39        | 40°11'54.433"N | 80°34'31.093"W | 9367.44           | 170.480         | 1.24          | -0.08                | 1.23                |
| 15920.00 | 90.460          | 157.950     | 5992.34  | 9390.87        | -9260.69   | 1558.24   | 1759017.49        | 14599261.16        | 40°11'54.213"N | 80°34'30.978"W | 9390.87           | 170.449         | 0.00          | 0.00                 | 0.00                |

## HOLE & CASING SECTIONS - Ref Wellbore: John Good Jr BRK 206H AWB Ref Wellpath: John Good Jr BRK 206H AWP Proj: 15920'

| String/Diameter             | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | End N/S [ft] | Start E/W [ft] | End E/W [ft] |
|-----------------------------|---------------|-------------|---------------|----------------|--------------|----------------|--------------|----------------|--------------|
| 17.5in Open Hole            | 26.00         | 400.00      | 374.00        | 26.00          | 399.99       | 0.00           | 1.42         | 0.00           | -1.71        |
| 13.375in Casing Surface     | 26.00         | 380.00      | 354.00        | 26.00          | 379.99       | 0.00           | 1.36         | 0.00           | -1.67        |
| 12.25in Open Hole           | 400.00        | 1680.00     | 1280.00       | 399.99         | 1675.35      | 1.42           | -63.99       | -1.71          | -44.81       |
| 9.625in Casing Intermediate | 26.00         | 1660.00     | 1634.00       | 26.00          | 1655.62      | 0.00           | -61.27       | 0.00           | -43.07       |
| 8.75in Open Hole            | 1680.00       | 5341.00     | 3661.00       | 1675.35        | 4943.62      | -63.99         | -142.18      | -44.81         | -1603.28     |
| 8.5in Open Hole             | 5341.00       | 15920.00    | 10579.00      | 4943.62        | 5992.34      | -142.18        | -9260.69     | -1603.28       | 1558.24      |

### REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

### TARGETS

| Name                            | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape   |
|---------------------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| John Good Jr BRK 206H LP Rev-2  | 5890.00  | -760.47    | -1899.33  | 1755561.25        | 14607758.10        | 40°13'18.372"N | 80°35'15.026"W | point   |
| John Good Jr N LL               | 5897.00  | -13.47     | 3.41      | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr S LL               | 5897.00  | -13.47     | 3.41      | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr SW LL              | 5897.00  | -13.47     | 3.41      | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr BRK 206H BHL Rev-2 | 5998.00  | -9266.47   | 1553.21   | 1759012.46        | 14599255.38        | 40°11'54.156"N | 80°34'31.043"W | point   |

### WELLPATH COMPOSITION - Ref Wellbore: John Good Jr BRK 206H AWB Ref Wellpath: John Good Jr BRK 206H AWP Proj: 15920'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment                             | Wellbore                  |
|---------------|-------------|------------------------------|--|---------------------------|
| 26.00         | 265.00      | OWSG EMS rev2 - Standard     | 01 MSS <17.5"> (174'-265')                   | John Good Jr BRK 206H AWB |
| 265.00        | 1605.00     | BHI NaviTrak (Axial)         | 02_APS EM <12.25"> (265')(423'-1605')        | John Good Jr BRK 206H AWB |
| 1605.00       | 5250.00     | BHI NaviTrak (Axial)         | 03_APS EM <8.75"> (1605')(1723'-5250')       | John Good Jr BRK 206H AWB |
| 5250.00       | 15896.00    | BHI AutoTrak Curve (Short)   | 04_BHI AT Curve <8.5"> (5250')(5312'-15896') | John Good Jr BRK 206H AWB |
| 15896.00      | 15920.00    | Blind Drilling (std)         | Projection to bit                            | John Good Jr BRK 206H AWB |

**REFERENCE WELLPATH IDENTIFICATION**

|          |                      |          |                           |
|----------|----------------------|----------|---------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #206                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 206H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 206H AWB |
| Facility | John Good Jr BRK Pad |          |                           |

**WELLPATH COMMENTS**

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Comment                                   |
|----------|-----------------|-------------|----------|---|
| 174.00   | 0.700           | 300.480     | 174.00   | MSS <17.5"> (174'-265')                   |
| 423.00   | 0.170           | 325.030     | 422.99   | APS EM <12.25"> (265')(423'-1605')        |
| 1723.00  | 8.930           | 209.350     | 1717.81  | APS EM <8.75">(1605')(1723'-5250')        |
| 5312.00  | 29.830          | 277.630     | 4918.55  | BHI AT Curve <8.5"> (5250')(5312'-15896') |
| 15920.00 | 90.460          | 157.950     | 5992.34  | Projection to Bit                         |

**COMMENTS**

Wellpath general comments  
API: 47-009-00196-0000  
Job#: 8680420  
Rig: SDC-46  
Duration: 07/24/17 - 08/02/17

Top Hole Latitude: 40°15'00"

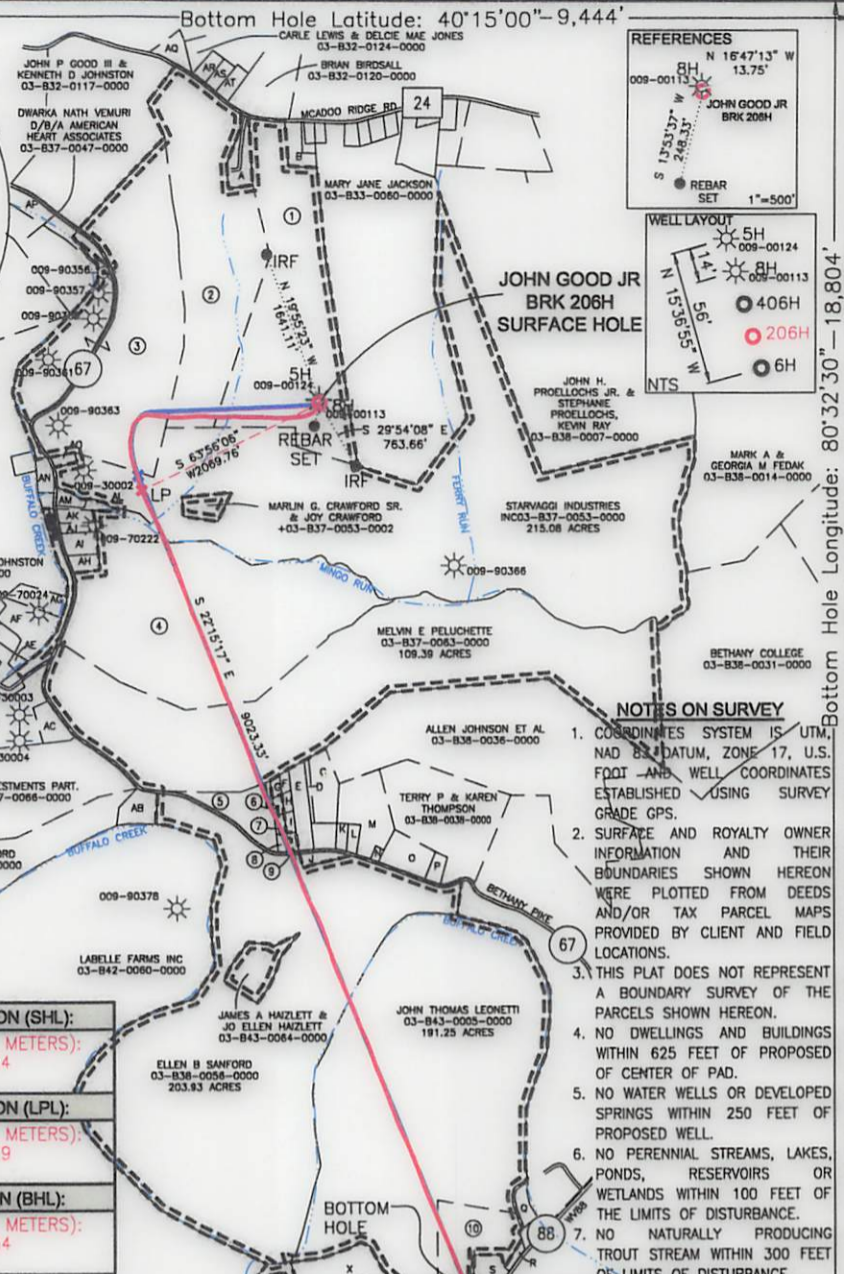
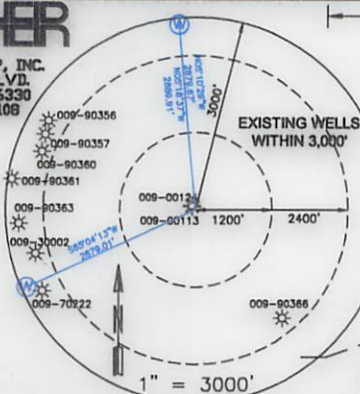
10,956'

Bottom Hole Latitude: 40°15'00"-9,444'

**THRASHER**

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

GRID NORTH  
UTM, NAD83 DATUM, ZONE 17, US FT



| TRACT | ADJOINER  | TAX PARCEL       |
|-------|---|------------------|
| A     | JOHN PRATHER GOOD III & LAURIE THOMAS                       | 03-832-0119-0000 |
| B     | JOHN PRATHER GOOD JR IRREVOCABLE TRUST                      | 03-833-0057-0000 |
| C     | MARK T. NICHOLSON   | 03-838-0045-0000 |
| D     | MARK T. NICHOLSON   | 03-838-0046-0000 |
| E     | HARRY J. LOWE   | 03-838-0047-0000 |
| F     | LESLIE & GAYLENE ELSON                                      | 03-838-0051-0000 |
| G     | LESLIE & GAYLENE ELSON                                      | 03-838-0052-0000 |
| H     | LESLIE & GAYLENE ELSON                                      | 03-838-0050-0000 |
| I     | LESLIE & GAYLENE ELSON                                      | 03-838-0049-0000 |
| J     | PENNY M. STUMPF   | 03-838-0057-0000 |
| K     | MATTHEW T. NICHOLSON  | 03-838-0043-0000 |
| L     | MARK T. NICHOLSON & KIMBERLY J. NICHOLSON                   | 03-838-0042-0001 |
| M     | ROY T. NICHOLSON  | 03-838-0042-0000 |
| N     | ROY T. NICHOLSON  | 03-838-0041-0000 |
| O     | AMY LYNN RICE   | 03-838-0040-0000 |
| P     | GEORGE S RICE   | 03-838-0039-0000 |
| Q     | BRIAN CORWIN  | 03-843-0026-0000 |
| R     | BETHANY VOLUNTEER FIRE DEPARTMENT                           | 03-843-0063-0000 |
| S     | ROBERT & MARY MOZINGO                                       | 03-843-0006-0001 |
| T     | BRIAN LEE BECK  | 03-843-0007-0000 |
| U     | WINDSOR POWER HOUSE COAL CO                                 | 03-843-0008-0000 |
| V     | MARY W. CHAMBERS  | 03-843-0012-0000 |
| W     | MARY W. CHAMBERS  | 03-843-0013-0000 |
| X     | WINDSOR POWER HOUSE COAL CO                                 | 03-843-0015-0000 |
| Y     | MARY W. CHAMBERS  | 03-843-0014-0000 |
| Z     | WINDSOR POWER HOUSE COAL CO                                 | 03-843-0016-0000 |
| AA    | WINDSOR POWER HOUSE COAL CO                                 | 03-842-0048-0000 |
| AB    | JOHN B. DAUGHERTY   | 03-837-0085-0000 |
| AC    | KEITH LOHSE   | 03-837-0087-0000 |
| AD    | THEODORE W. BUNNELL   | 03-837-0086-0000 |
| AE    | WILLIAM E. JOHNSTON & GLORIA BOHMAN                         | 03-837-0088-0000 |
| AF    | JOSEPH K. BOHMAN, SR. & GLORIA J. BOHMAN                    | 03-837-0089-0001 |
| AG    | JOSEPH K. & GLORIA BOHMAN                                   | 03-837-0070-0000 |
| AH    | JOHN E. & SHERRILL J. RIPLEY                                | 03-837-0061-0000 |
| AI    | TRAVIS POLEN  | 03-837-0059-0000 |
| AJ    | JEREMY S. PERSINGER   | 03-837-0057-0000 |
| AK    | ERIVAN CORWIN, RICHARD CORWIN, DIANE E. DIGHT, JOEY TENHANT | 03-837-0056-0000 |
| AL    | MARLIN G. SR & JOY CRAWFORD                                 | 03-837-0055-0000 |
| AM    | LAWRENCE PAUL SMITH, SR.                                    | 03-837-0054-0000 |
| AN    | WILLIAM E. & HAZEL E. JOHNSTON                              | 03-837-0053-0001 |
| AO    | CLEO KLAGES   | 03-837-0052-0000 |
| AP    | BONNIE LUCACENA & SHAYNE SCHULTZNER                         | 03-837-0049-0000 |
| AQ    | LLOYD M. & ALICE MEDHA                                      | 03-832-0125-0000 |
| AR    | BRAFORD L. JONES & SHARON E. SNIDER                         | 03-832-0123-0000 |
| AS    | TRAVIS A. MILLER  | 03-832-0122-0000 |
| AT    | CRAIG & COURTNEY HAVELKA                                    | 03-832-0121-0000 |

**SURFACE HOLE LOCATION (SHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,452,685.274  
EASTING: 535,674.834

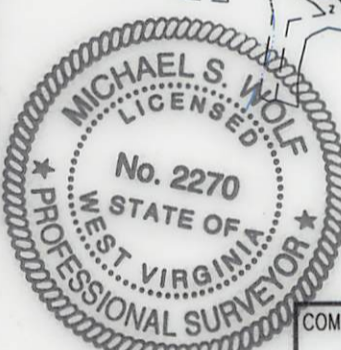
**LANDING POINT LOCATION (LPL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,452,408.079  
EASTING: 535,108.130

**BOTTOM HOLE LOCATION (BHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,449,862.634  
EASTING: 536,149.743

**NOTES ON SURVEY**

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

| TRACT | SURFACE OWNER   | TAX PARCEL       | ACRES  |
|-------|---|------------------|--------|
| 1     | JOHN P. GOOD III, TRUSTEE OF THE JOHN P. GOOD JR. IRREVOCABLE TRUST   | 03-838-0001-0000 | 66.57  |
| 2     | PHYLLIS A. MARSH, TRUSTEE OF THE PHYLLIS A. MARSH LIVING TRUST  | 03-832-0118-0000 | 60.023 |
| 3     | BONNIE LEE LUCACENA, SHELBY CARRELL, SHAYNE SCHULTZNER, SHANON SCHULTZNER, SUEY SCHULTZNER, CHEW SHARPE, JOHN THOMAS RODGERS, PAIGE ELIZABETH ROLLINS | 03-837-0048-0000 | 81.50  |
| 4     | WILDA L. RIPLEY, JOHN E. RIPLEY, & SHERRILL J. RIPLEY   | 03-837-0062-0000 | 95.40  |
| 5     | DEANNA ARACIO AND MORGAN A. ARACIO, TENANTS IN COMMON   | 03-837-0084-0000 | 8.30   |
| 6     | LESLIE & GAYLENE ELSON  | 03-838-0053-0000 | 0.46   |
| 7     | LESLIE & GAYLENE ELSON  | 03-838-0054-0000 | 0.47   |
| 8     | LESLIE & GAYLENE ELSON  | 03-838-0055-0000 | 0.45   |
| 9     | LESLIE & GAYLENE ELSON  | 03-838-0048-0000 | 0.45   |
| 10    | LEONA MAE BECK  | 03-843-0006-0000 | 12.81  |



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2270 *M.S.W. 8/23/17*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

**WVDEP**  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

COMPANY: **SWN** Production Company, LLC

OPERATOR'S WELL #: JOHN GOOD JR BRK 206H

API WELL #: **47** STATE **009** COUNTY **00196** PERMIT

WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW

WATERSHED: BUFFALO CREEK ELEVATION: 1152.6'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY

SURFACE OWNER: JOHN P. GOOD III, TRUSTEE OF THE JOHN P GOOD JR., IRREVOCABLE TRUST ACREAGE: 66.57

OIL & GAS ROYALTY OWNER: JOHN P. GOOD, JR. ACREAGE: 66.57

DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,992' TVD 15,920' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

| LEGEND:                               | REVISIONS:          | DATE:                |
|---------------------------------------|---------------------|----------------------|
| ○ PROPOSED SURFACE HOLE / BOTTOM HOLE | — SURVEYED BOUNDARY | 08-18-2017           |
| ⊙ EXISTING / PRODUCING WELLHEAD       | — DRILLING UNIT     |                      |
| LPL* LANDING POINT LOCATION           | == LEASE BOUNDARY   |                      |
| ⊙ EXISTING WATER WELL                 | — PROPOSED PATH     |                      |
| ⊙ EXISTING SPRING                     | — AS-DRILLED PATH   |                      |
|                                       |                     | DRAWN BY: R. DOERR   |
|                                       |                     | SCALE: 1" = 2000'    |
|                                       |                     | DRAWING NO: 050-5700 |
|                                       |                     | WELL LOCATION PLAT   |