

January 15, 2021

**Via Electronic Delivery**

Andrew Johnston, Esq.  
Executive Secretary  
Maryland Public Service Commission  
6 St. Paul Street, 16<sup>th</sup> Floor  
Baltimore, MD 21202

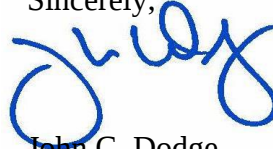
**RE: Case No. 9035**  
**Washington Gas's 59<sup>th</sup> Quarterly Report**

Dear Mr. Johnston:

Pursuant to the Commission's April 7, 2005 Notice of Inquiry, as modified by the Notice of Change in Reporting dated April 12, 2006 in the above-referenced proceeding, Washington Gas hereby files its 59<sup>th</sup> Quarterly Report in this proceeding.

Please contact me if you have any questions.

Sincerely,



John C. Dodge  
Associate General Counsel and Director,  
Regulatory Matters

Attachments

cc: John Clementson, Assistant Chief Engineer  
Leslie M. Romine, Staff Counsel  
Paula M. Carmody, Maryland People's Counsel  
Joel L. Greene, Esq.

IN THE MATTER OF THE INQUIRY INTO NATURAL GAS :  
LEAKS FROM THE WASHINGTON GAS LIGHT COMPANY : CASE NO. 9035  
DISTRIBUTION SYSTEM :

WASHINGTON GAS LIGHT COMPANY  
59<sup>th</sup> QUARTERLY REPORT

Pursuant to the Notice of Inquiry dated April 7, 2005 in the captioned proceeding, as modified by the Notice of Change in Reporting dated April 12, 2006, Washington Gas Light Company ("Washington Gas" or "Company") files its 59<sup>th</sup> Quarterly Report in this proceeding.

The rehabilitation project to address the increase in mechanical coupling leaks in the affected area in Prince George's County, as modified by the Company on August 8, 2006, has been completed. Washington Gas is continuing to conduct leak surveys within the affected area in accordance with applicable regulations. All new Grade 1 leaks continue to be repaired immediately upon discovery and all new Grade 2 leaks within the affected area will be repaired within normal timeframes.

Washington Gas, Staff and the Office of People's Counsel ("OPC") met during the fall of 2015 to review the data submitted in the quarterly reports filed by the Company, including data regarding hexane injections. The Company offered to supplement its quarterly reports and OPC offered to develop a quarterly data protocol. The parties agreed that going forward an annual meeting regarding the Company's hexane injection program would be sufficient.

A **CONFIDENTIAL** report showing for each gate station on each of Washington Gas's interstate pipeline suppliers whether there is hexane injection capability at the gate station. Also attached are an annual summary of coupling leaks in Montgomery and Prince George's Counties from 2000 to date and the monthly leaks, along with the calculation of the Z Value, for both Counties.

In response to the specific questions raised by the Commission in the April 7, 2005 Notice of Inquiry, Washington Gas states as follows:

1. The written project plan and future revisions, including maps of the affected area.

The rehabilitation project in the affected area has been completed. However, the Company continues planned replacement of coupled pipe in Prince George's County based on engineering analysis of leak data.

2. Operator Qualification plans for additional crews and progress in obtaining the additional crews.

The rehabilitation project in the affected area has been completed.

3. Construction notices of planned repairs of known leaks.

The rehabilitation project in the affected area has been completed.

4. Construction notices for planned replacements of gas service lines and repairs of gas mains in the affected area.

The rehabilitation project in the affected area has been completed.

5. Updates on the investigations of the reason(s) for the degradation of the seals in the couplings.

Washington Gas is continuing to monitor coupling leaks throughout its distribution system.

6. Descriptions of any “temporary” remediation plans to correct or reduce future leaks until the rehabilitation program is completed.

Washington Gas continues to operate three hexane injection facilities. These facilities are used to condition domestic gas having low C5+ concentrations.

Washington Gas is continuing to monitor and analyze coupling leak rates in all areas of the system, including in the affected area of Prince George’s County. All leaks which are found are being addressed in compliance with DOT requirements.

Summary of Coupling Leaks  
In Montgomery and Prince George's Counties, Maryland  
2000 through 2020 (4<sup>th</sup> Quarter)

59<sup>th</sup> Quarterly Report

|             | <b>Coupling Leaks</b>    |                               |
|-------------|--------------------------|-------------------------------|
| <b>Year</b> | <b>Montgomery County</b> | <b>Prince George's County</b> |
| 2000        | 140                      | 206                           |
| 2001        | 171                      | 241                           |
| 2002        | 231                      | 122                           |
| 2003        | 167                      | 430                           |
| 2004        | 193                      | 1870                          |
| 2005        | 229                      | 1929                          |
| 2006        | 274                      | 1163                          |
| 2007        | 252                      | 783                           |
| 2008        | 329                      | 487                           |
| 2009        | 313                      | 464                           |
| 2010        | 211                      | 319                           |
| 2011        | 116                      | 104                           |
| 2012        | 132                      | 48                            |
| 2013        | 277                      | 125                           |
| 2014        | 399                      | 190                           |
| 2015        | 342                      | 221                           |
| 2016        | 452                      | 331                           |
| 2017        | 909                      | 606                           |
| 2018        | 1355                     | 702                           |
| 2019        | 1310                     | 748                           |
| 2020        | 765                      | 477                           |

**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                                |                                              |         | Prince George's County |       |                                |                                              |         |
|-------------------|-------|--------------------------------|----------------------------------------------|---------|------------------------|-------|--------------------------------|----------------------------------------------|---------|
| yyyymm            | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value | yyyymm                 | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value |
| 200001            | 12    |                                |                                              |         | 200001                 | 14    |                                |                                              |         |
| 200002            | 20    |                                |                                              |         | 200002                 | 36    |                                |                                              |         |
| 200003            | 10    |                                |                                              |         | 200003                 | 6     |                                |                                              |         |
| 200004            | 9     |                                |                                              |         | 200004                 | 7     |                                |                                              |         |
| 200005            | 6     |                                |                                              |         | 200005                 | 14    |                                |                                              |         |
| 200006            | 6     |                                |                                              |         | 200006                 | 15    |                                |                                              |         |
| 200007            | 9     |                                |                                              |         | 200007                 | 20    |                                |                                              |         |
| 200008            | 14    |                                |                                              |         | 200008                 | 7     |                                |                                              |         |
| 200009            | 14    |                                |                                              |         | 200009                 | 18    |                                |                                              |         |
| 200010            | 18    |                                |                                              |         | 200010                 | 30    |                                |                                              |         |
| 200011            | 15    |                                |                                              |         | 200011                 | 25    |                                |                                              |         |
| 200012            | 7     |                                |                                              |         | 200012                 | 14    |                                |                                              |         |
| 200101            | 26    |                                |                                              |         | 200101                 | 30    |                                |                                              |         |
| 200102            | 19    |                                |                                              |         | 200102                 | 39    |                                |                                              |         |
| 200103            | 14    |                                |                                              |         | 200103                 | 55    |                                |                                              |         |
| 200104            | 6     |                                |                                              |         | 200104                 | 9     |                                |                                              |         |
| 200105            | 7     |                                |                                              |         | 200105                 | 7     |                                |                                              |         |
| 200106            | 8     |                                |                                              |         | 200106                 | 8     |                                |                                              |         |
| 200107            | 10    |                                |                                              |         | 200107                 | 11    |                                |                                              |         |
| 200108            | 10    |                                |                                              |         | 200108                 | 8     |                                |                                              |         |
| 200109            | 21    |                                |                                              |         | 200109                 | 10    |                                |                                              |         |
| 200110            | 16    |                                |                                              |         | 200110                 | 22    |                                |                                              |         |
| 200111            | 18    |                                |                                              |         | 200111                 | 20    |                                |                                              |         |
| 200112            | 16    |                                |                                              |         | 200112                 | 22    |                                |                                              |         |
| 200201            | 44    |                                |                                              |         | 200201                 | 22    |                                |                                              |         |
| 200202            | 15    |                                |                                              |         | 200202                 | 8     |                                |                                              |         |
| 200203            | 7     |                                |                                              |         | 200203                 | 8     |                                |                                              |         |
| 200204            | 15    |                                |                                              |         | 200204                 | 11    |                                |                                              |         |
| 200205            | 19    |                                |                                              |         | 200205                 | 8     |                                |                                              |         |
| 200206            | 20    |                                |                                              |         | 200206                 | 3     |                                |                                              |         |
| 200207            | 10    |                                |                                              |         | 200207                 | 2     |                                |                                              |         |
| 200208            | 12    |                                |                                              |         | 200208                 | 4     |                                |                                              |         |
| 200209            | 15    |                                |                                              |         | 200209                 | 8     |                                |                                              |         |
| 200210            | 22    |                                |                                              |         | 200210                 | 12    |                                |                                              |         |
| 200211            | 19    |                                |                                              |         | 200211                 | 8     |                                |                                              |         |
| 200212            | 33    |                                |                                              |         | 200212                 | 28    |                                |                                              |         |
| 200301            | 14    | 15.06                          | 7.87                                         | -0.13   | 200301                 | 25    | 15.81                          | 11.56                                        | 0.80    |
| 200302            | 15    | 15.11                          | 7.85                                         | -0.01   | 200302                 | 26    | 16.11                          | 11.65                                        | 0.85    |
| 200303            | 19    | 14.97                          | 7.81                                         | 0.52    | 200303                 | 20    | 15.83                          | 11.28                                        | 0.37    |
| 200304            | 6     | 15.22                          | 7.79                                         | -1.18   | 200304                 | 12    | 16.22                          | 11.17                                        | -0.38   |
| 200305            | 11    | 15.14                          | 7.87                                         | -0.53   | 200305                 | 10    | 16.36                          | 11.08                                        | -0.57   |
| 200306            | 8     | 15.28                          | 7.75                                         | -0.94   | 200306                 | 10    | 16.25                          | 11.13                                        | -0.56   |
| 200307            | 4     | 15.33                          | 7.69                                         | -1.47   | 200307                 | 9     | 16.11                          | 11.17                                        | -0.64   |

**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                          |                                     |         | Prince George's County |       |                          |                                     |         |
|-------------------|-------|--------------------------|-------------------------------------|---------|------------------------|-------|--------------------------|-------------------------------------|---------|
| yyyymm            | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value | yyyymm                 | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value |
| 200308            | 12    | 15.19                    | 7.85                                | -0.41   | 200308                 | 9     | 15.81                    | 11.21                               | -0.61   |
| 200309            | 23    | 15.14                    | 7.86                                | 1.00    | 200309                 | 19    | 15.86                    | 11.17                               | 0.28    |
| 200310            | 17    | 15.39                    | 7.97                                | 0.20    | 200310                 | 19    | 15.89                    | 11.18                               | 0.28    |
| 200311            | 23    | 15.36                    | 7.96                                | 0.96    | 200311                 | 61    | 15.58                    | 10.93                               | 4.15    |
| 200312            | 15    | 15.58                    | 8.06                                | -0.07   | 200312                 | 210   | 16.58                    | 13.22                               | 14.63   |
| 200401            | 18    | 15.81                    | 7.93                                | 0.28    | 200401                 | 250   | 22.03                    | 34.83                               | 6.55    |
| 200402            | 11    | 15.58                    | 7.74                                | -0.59   | 200402                 | 365   | 28.14                    | 51.55                               | 6.53    |
| 200403            | 7     | 15.36                    | 7.76                                | -1.08   | 200403                 | 102   | 37.19                    | 76.24                               | 0.85    |
| 200404            | 10    | 15.17                    | 7.88                                | -0.66   | 200404                 | 79    | 38.50                    | 76.95                               | 0.53    |
| 200405            | 6     | 15.28                    | 7.77                                | -1.19   | 200405                 | 29    | 40.44                    | 77.07                               | -0.15   |
| 200406            | 4     | 15.25                    | 7.81                                | -1.44   | 200406                 | 52    | 41.06                    | 76.88                               | 0.14    |
| 200407            | 6     | 15.14                    | 7.94                                | -1.15   | 200407                 | 32    | 42.28                    | 76.69                               | -0.13   |
| 200408            | 15    | 15.03                    | 8.04                                | 0.00    | 200408                 | 92    | 42.86                    | 76.53                               | 0.64    |
| 200409            | 26    | 15.17                    | 7.99                                | 1.36    | 200409                 | 136   | 45.19                    | 76.71                               | 1.18    |
| 200410            | 18    | 15.31                    | 8.14                                | 0.33    | 200410                 | 200   | 48.69                    | 77.93                               | 1.94    |
| 200411            | 39    | 15.36                    | 8.15                                | 2.90    | 200411                 | 241   | 53.64                    | 81.74                               | 2.29    |
| 200412            | 33    | 15.94                    | 9.05                                | 1.88    | 200412                 | 292   | 59.78                    | 87.25                               | 2.66    |
| 200501            | 27    | 16.42                    | 9.48                                | 1.12    | 200501                 | 273   | 67.28                    | 95.16                               | 2.16    |
| 200502            | 18    | 15.94                    | 8.44                                | 0.24    | 200502                 | 319   | 74.25                    | 100.78                              | 2.43    |
| 200503            | 15    | 16.03                    | 8.44                                | -0.12   | 200503                 | 245   | 82.89                    | 108.00                              | 1.50    |
| 200504            | 18    | 16.25                    | 8.30                                | 0.21    | 200504                 | 149   | 89.47                    | 110.50                              | 0.54    |
| 200505            | 19    | 16.33                    | 8.30                                | 0.32    | 200505                 | 91    | 93.31                    | 110.10                              | -0.02   |
| 200506            | 11    | 16.33                    | 8.30                                | -0.64   | 200506                 | 68    | 95.61                    | 109.12                              | -0.25   |
| 200507            | 7     | 16.08                    | 8.33                                | -1.09   | 200507                 | 67    | 97.42                    | 108.08                              | -0.28   |
| 200508            | 15    | 16.00                    | 8.40                                | -0.12   | 200508                 | 57    | 99.22                    | 106.98                              | -0.39   |
| 200509            | 16    | 16.08                    | 8.38                                | -0.01   | 200509                 | 93    | 100.69                   | 105.99                              | -0.07   |
| 200510            | 37    | 16.11                    | 8.38                                | 2.49    | 200510                 | 114   | 103.06                   | 104.81                              | 0.10    |
| 200511            | 18    | 16.53                    | 9.03                                | 0.16    | 200511                 | 145   | 105.89                   | 103.65                              | 0.38    |
| 200512            | 28    | 16.50                    | 9.02                                | 1.28    | 200512                 | 308   | 109.69                   | 102.46                              | 1.94    |
| 200601            | 41    | 16.36                    | 8.79                                | 2.80    | 200601                 | 278   | 117.47                   | 106.62                              | 1.51    |
| 200602            | 21    | 17.11                    | 9.69                                | 0.40    | 200602                 | 210   | 124.50                   | 108.67                              | 0.79    |
| 200603            | 13    | 17.28                    | 9.71                                | -0.44   | 200603                 | 85    | 129.61                   | 108.23                              | -0.41   |
| 200604            | 7     | 17.11                    | 9.73                                | -1.04   | 200604                 | 41    | 131.42                   | 106.89                              | -0.85   |
| 200605            | 14    | 17.14                    | 9.70                                | -0.32   | 200605                 | 43    | 132.22                   | 106.07                              | -0.84   |
| 200606            | 10    | 17.22                    | 9.65                                | -0.75   | 200606                 | 20    | 133.14                   | 105.12                              | -1.08   |
| 200607            | 17    | 17.28                    | 9.61                                | -0.03   | 200607                 | 35    | 133.42                   | 104.80                              | -0.94   |
| 200608            | 20    | 17.64                    | 9.33                                | 0.25    | 200608                 | 23    | 134.14                   | 104.00                              | -1.07   |
| 200609            | 24    | 17.86                    | 9.29                                | 0.66    | 200609                 | 63    | 134.53                   | 103.55                              | -0.69   |
| 200610            | 31    | 17.89                    | 9.31                                | 1.41    | 200610                 | 97    | 135.75                   | 102.40                              | -0.38   |
| 200611            | 39    | 18.28                    | 9.56                                | 2.17    | 200611                 | 124   | 137.92                   | 100.67                              | -0.14   |
| 200612            | 37    | 18.72                    | 10.14                               | 1.80    | 200612                 | 144   | 139.67                   | 99.83                               | 0.04    |
| 200701            | 35    | 19.33                    | 10.56                               | 1.48    | 200701                 | 182   | 137.83                   | 99.11                               | 0.45    |
| 200702            | 21    | 19.81                    | 10.88                               | 0.11    | 200702                 | 125   | 135.94                   | 97.55                               | -0.11   |
| 200703            | 16    | 20.08                    | 10.77                               | -0.38   | 200703                 | 99    | 129.28                   | 89.30                               | -0.34   |
| 200704            | 10    | 20.33                    | 10.56                               | -0.98   | 200704                 | 61    | 129.19                   | 89.32                               | -0.76   |
| 200705            | 13    | 20.33                    | 10.56                               | -0.69   | 200705                 | 51    | 128.69                   | 89.66                               | -0.87   |
| 200706            | 11    | 20.53                    | 10.35                               | -0.92   | 200706                 | 28    | 129.31                   | 89.04                               | -1.14   |

**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                                |                                              |         | Prince George's County |       |                                |                                              |         |
|-------------------|-------|--------------------------------|----------------------------------------------|---------|------------------------|-------|--------------------------------|----------------------------------------------|---------|
| yyyymm            | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value | yyyymm                 | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value |
| 200707            | 10    | 20.72                          | 10.10                                        | -1.06   | 200707                 | 19    | 128.64                         | 89.72                                        | -1.22   |
| 200708            | 8     | 20.83                          | 9.95                                         | -1.29   | 200708                 | 14    | 128.28                         | 90.14                                        | -1.27   |
| 200709            | 20    | 20.64                          | 10.13                                        | -0.06   | 200709                 | 25    | 126.11                         | 91.96                                        | -1.10   |
| 200710            | 19    | 20.47                          | 10.09                                        | -0.15   | 200710                 | 31    | 123.03                         | 93.47                                        | -0.98   |
| 200711            | 37    | 20.50                          | 10.09                                        | 1.64    | 200711                 | 67    | 118.33                         | 93.74                                        | -0.55   |
| 200712            | 52    | 20.44                          | 9.99                                         | 3.16    | 200712                 | 81    | 113.50                         | 91.69                                        | -0.35   |
| 200801            | 40    | 20.97                          | 11.11                                        | 1.71    | 200801                 | 98    | 107.64                         | 86.56                                        | -0.11   |
| 200802            | 37    | 21.33                          | 11.51                                        | 1.36    | 200802                 | 79    | 102.78                         | 81.79                                        | -0.29   |
| 200803            | 29    | 21.86                          | 11.79                                        | 0.61    | 200803                 | 43    | 96.11                          | 72.96                                        | -0.73   |
| 200804            | 28    | 22.25                          | 11.79                                        | 0.49    | 200804                 | 24    | 90.50                          | 68.84                                        | -0.97   |
| 200805            | 15    | 22.53                          | 11.80                                        | -0.64   | 200805                 | 22    | 87.03                          | 68.96                                        | -0.94   |
| 200806            | 18    | 22.42                          | 11.85                                        | -0.37   | 200806                 | 17    | 85.11                          | 69.80                                        | -0.98   |
| 200807            | 10    | 22.61                          | 11.72                                        | -1.08   | 200807                 | 12    | 83.69                          | 70.67                                        | -1.01   |
| 200808            | 15    | 22.69                          | 11.61                                        | -0.66   | 200808                 | 21    | 82.17                          | 71.62                                        | -0.85   |
| 200809            | 16    | 22.69                          | 11.61                                        | -0.58   | 200809                 | 20    | 81.17                          | 72.23                                        | -0.85   |
| 200810            | 37    | 22.69                          | 11.61                                        | 1.23    | 200810                 | 38    | 79.14                          | 72.91                                        | -0.56   |
| 200811            | 37    | 22.69                          | 11.61                                        | 1.23    | 200811                 | 33    | 77.03                          | 72.98                                        | -0.60   |
| 200812            | 47    | 23.22                          | 11.83                                        | 2.01    | 200812                 | 80    | 73.92                          | 72.38                                        | 0.08    |
| 200901            | 54    | 23.75                          | 12.45                                        | 2.43    | 200901                 | 80    | 67.58                          | 60.28                                        | 0.21    |
| 200902            | 24    | 24.11                          | 13.14                                        | -0.01   | 200902                 | 51    | 62.08                          | 48.39                                        | -0.23   |
| 200903            | 22    | 24.19                          | 13.13                                        | -0.17   | 200903                 | 39    | 57.67                          | 41.23                                        | -0.45   |
| 200904            | 9     | 24.44                          | 12.99                                        | -1.19   | 200904                 | 23    | 56.39                          | 41.07                                        | -0.81   |
| 200905            | 9     | 24.50                          | 12.92                                        | -1.20   | 200905                 | 22    | 55.89                          | 41.37                                        | -0.82   |
| 200906            | 13    | 24.36                          | 13.06                                        | -0.87   | 200906                 | 12    | 55.31                          | 41.70                                        | -1.04   |
| 200907            | 23    | 24.44                          | 12.98                                        | -0.11   | 200907                 | 10    | 55.08                          | 41.92                                        | -1.08   |
| 200908            | 17    | 24.61                          | 12.92                                        | -0.59   | 200908                 | 10    | 54.39                          | 42.46                                        | -1.05   |
| 200909            | 18    | 24.53                          | 12.96                                        | -0.50   | 200909                 | 10    | 54.03                          | 42.79                                        | -1.03   |
| 200910            | 36    | 24.36                          | 13.00                                        | 0.90    | 200910                 | 47    | 52.56                          | 43.38                                        | -0.13   |
| 200911            | 37    | 24.50                          | 13.10                                        | 0.95    | 200911                 | 53    | 51.17                          | 42.72                                        | 0.04    |
| 200912            | 51    | 24.44                          | 13.04                                        | 2.04    | 200912                 | 107   | 49.19                          | 40.86                                        | 1.41    |
| 201001            | 30    | 24.83                          | 13.62                                        | 0.38    | 201001                 | 87    | 48.17                          | 38.82                                        | 1.00    |
| 201002            | 34    | 24.69                          | 13.54                                        | 0.69    | 201002                 | 87    | 45.53                          | 32.11                                        | 1.29    |
| 201003            | 23    | 25.06                          | 13.61                                        | -0.15   | 201003                 | 46    | 44.47                          | 29.97                                        | 0.05    |
| 201004            | 18    | 25.25                          | 13.53                                        | -0.54   | 201004                 | 17    | 43.00                          | 28.48                                        | -0.91   |
| 201005            | 16    | 25.47                          | 13.34                                        | -0.71   | 201005                 | 13    | 41.78                          | 28.63                                        | -1.01   |
| 201006            | 13    | 25.56                          | 13.27                                        | -0.95   | 201006                 | 6     | 40.72                          | 28.98                                        | -1.20   |
| 201007            | 10    | 25.61                          | 13.21                                        | -1.18   | 201007                 | 9     | 40.11                          | 29.48                                        | -1.06   |
| 201008            | 18    | 25.61                          | 13.21                                        | -0.58   | 201008                 | 6     | 39.83                          | 29.74                                        | -1.14   |
| 201009            | 10    | 25.89                          | 12.93                                        | -1.23   | 201009                 | 12    | 39.61                          | 29.96                                        | -0.92   |
| 201010            | 19    | 25.61                          | 13.16                                        | -0.50   | 201010                 | 14    | 39.25                          | 30.22                                        | -0.84   |
| 201011            | 13    | 25.61                          | 13.16                                        | -0.96   | 201011                 | 11    | 38.78                          | 30.49                                        | -0.91   |
| 201012            | 7     | 24.94                          | 13.18                                        | -1.36   | 201012                 | 11    | 37.22                          | 30.43                                        | -0.86   |
| 201101            | 9     | 23.69                          | 12.66                                        | -1.16   | 201101                 | 25    | 35.28                          | 29.79                                        | -0.35   |
| 201102            | 11    | 22.83                          | 12.58                                        | -0.94   | 201102                 | 14    | 33.25                          | 27.81                                        | -0.69   |
| 201103            | 13    | 22.11                          | 12.48                                        | -0.73   | 201103                 | 11    | 31.44                          | 26.85                                        | -0.76   |
| 201104            | 8     | 21.67                          | 12.52                                        | -1.09   | 201104                 | 4     | 30.56                          | 26.99                                        | -0.98   |
| 201105            | 4     | 21.11                          | 12.67                                        | -1.35   | 201105                 | 4     | 30.00                          | 27.33                                        | -0.95   |

**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                                |                                              |         | Prince George's County |       |                                |                                              |         |
|-------------------|-------|--------------------------------|----------------------------------------------|---------|------------------------|-------|--------------------------------|----------------------------------------------|---------|
| yyyymm            | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value | yyyymm                 | Total | Rolling 36<br>Month<br>Average | Rolling 36<br>Month<br>Standard<br>Deviation | Z Value |
| 201106            | 5     | 20.81                          | 12.95                                        | -1.22   | 201106                 |       | 29.50                          | 27.64                                        | -1.07   |
| 201107            | 5     | 20.44                          | 13.21                                        | -1.17   | 201107                 | 3     | 29.86                          | 27.96                                        | -0.96   |
| 201108            | 2     | 20.31                          | 13.35                                        | -1.37   | 201108                 | 10    | 29.60                          | 28.17                                        | -0.70   |
| 201109            | 11    | 19.94                          | 13.67                                        | -0.65   | 201109                 | 6     | 29.29                          | 28.33                                        | -0.82   |
| 201110            | 20    | 19.81                          | 13.74                                        | 0.01    | 201110                 | 9     | 28.89                          | 28.56                                        | -0.70   |
| 201111            | 12    | 19.33                          | 13.42                                        | -0.55   | 201111                 | 12    | 28.06                          | 28.71                                        | -0.56   |
| 201112            | 16    | 18.64                          | 13.12                                        | -0.20   | 201112                 | 6     | 27.46                          | 28.83                                        | -0.74   |
| 201201            | 14    | 17.78                          | 12.19                                        | -0.31   | 201201                 | 6     | 25.34                          | 27.54                                        | -0.70   |
| 201202            | 8     | 16.67                          | 10.50                                        | -0.83   | 201202                 | 5     | 23.23                          | 26.02                                        | -0.70   |
| 201203            | 8     | 16.22                          | 10.52                                        | -0.78   | 201203                 | 1     | 21.91                          | 25.74                                        | -0.81   |
| 201204            | 6     | 15.83                          | 10.56                                        | -0.93   | 201204                 |       | 20.83                          | 25.80                                        | -0.81   |
| 201205            | 2     | 15.75                          | 10.62                                        | -1.29   | 201205                 |       | 20.76                          | 26.18                                        | -0.79   |
| 201206            | 6     | 15.56                          | 10.81                                        | -0.88   | 201206                 | 1     | 20.73                          | 26.59                                        | -0.74   |
| 201207            | 2     | 15.36                          | 10.92                                        | -1.22   | 201207                 |       | 20.39                          | 26.77                                        | -0.76   |
| 201208            | 5     | 14.78                          | 11.06                                        | -0.88   | 201208                 | 3     | 20.72                          | 27.13                                        | -0.65   |
| 201209            | 4     | 14.44                          | 11.18                                        | -0.93   | 201209                 | 2     | 20.50                          | 27.25                                        | -0.68   |
| 201210            | 21    | 14.06                          | 11.29                                        | 0.62    | 201210                 | 6     | 20.25                          | 27.38                                        | -0.52   |
| 201211            | 42    | 13.64                          | 10.72                                        | 2.65    | 201211                 | 16    | 18.97                          | 27.05                                        | -0.11   |
| 201212            | 14    | 13.78                          | 11.06                                        | 0.02    | 201212                 | 8     | 17.81                          | 26.33                                        | -0.37   |
| 201301            | 14    | 12.75                          | 9.03                                         | 0.14    | 201301                 | 7     | 14.72                          | 20.73                                        | -0.37   |
| 201302            | 9     | 12.31                          | 8.54                                         | -0.39   | 201302                 | 9     | 12.22                          | 16.03                                        | -0.20   |
| 201303            | 12    | 11.61                          | 7.70                                         | 0.05    | 201303                 | 4     | 9.78                           | 8.40                                         | -0.69   |
| 201304            | 9     | 11.31                          | 7.45                                         | -0.31   | 201304                 | 4     | 8.47                           | 5.25                                         | -0.85   |
| 201305            | 9     | 11.06                          | 7.37                                         | -0.28   | 201305                 |       | 8.06                           | 5.07                                         | -1.59   |
| 201306            | 2     | 10.86                          | 7.33                                         | -1.21   | 201306                 | 3     | 7.90                           | 5.08                                         | -0.97   |
| 201307            | 9     | 10.56                          | 7.47                                         | -0.21   | 201307                 | 4     | 7.81                           | 5.14                                         | -0.74   |
| 201308            | 19    | 10.53                          | 7.47                                         | 1.13    | 201308                 | 6     | 7.65                           | 5.18                                         | -0.32   |
| 201309            | 14    | 10.56                          | 7.50                                         | 0.46    | 201309                 | 12    | 7.65                           | 5.18                                         | 0.84    |
| 201310            | 20    | 10.67                          | 7.52                                         | 1.24    | 201310                 | 27    | 7.65                           | 5.18                                         | 3.74    |
| 201311            | 101   | 10.69                          | 7.55                                         | 11.95   | 201311                 | 20    | 8.06                           | 6.15                                         | 1.94    |
| 201312            | 59    | 13.14                          | 16.85                                        | 2.72    | 201312                 | 29    | 8.35                           | 6.49                                         | 3.18    |
| 201401            | 24    | 14.58                          | 18.46                                        | 0.51    | 201401                 | 23    | 8.94                           | 7.47                                         | 1.88    |
| 201402            | 28    | 15.00                          | 18.50                                        | 0.70    | 201402                 | 19    | 8.87                           | 7.33                                         | 1.38    |
| 201403            | 33    | 15.47                          | 18.61                                        | 0.94    | 201403                 | 17    | 9.03                           | 7.50                                         | 1.06    |
| 201404            | 18    | 16.03                          | 18.83                                        | 0.10    | 201404                 | 15    | 9.23                           | 7.63                                         | 0.76    |
| 201405            | 37    | 16.31                          | 18.78                                        | 1.10    | 201405                 | 12    | 9.58                           | 7.64                                         | 0.32    |
| 201406            | 43    | 17.22                          | 18.97                                        | 1.36    | 201406                 | 8     | 9.84                           | 7.58                                         | -0.24   |
| 201407            | 37    | 18.28                          | 19.32                                        | 0.97    | 201407                 | 7     | 9.78                           | 7.46                                         | -0.37   |
| 201408            | 34    | 19.17                          | 19.43                                        | 0.76    | 201408                 | 13    | 9.91                           | 7.38                                         | 0.42    |
| 201409            | 22    | 20.06                          | 19.35                                        | 0.10    | 201409                 | 6     | 10.00                          | 7.40                                         | -0.54   |
| 201410            | 26    | 20.36                          | 19.29                                        | 0.29    | 201410                 | 15    | 10.00                          | 7.40                                         | 0.68    |
| 201411            | 36    | 20.53                          | 19.32                                        | 0.80    | 201411                 | 17    | 10.19                          | 7.45                                         | 0.91    |
| 201412            | 61    | 21.19                          | 19.43                                        | 2.05    | 201412                 | 38    | 10.34                          | 7.54                                         | 3.67    |
| 201501            | 81    | 22.44                          | 20.50                                        | 2.86    | 201501                 | 52    | 11.34                          | 8.94                                         | 4.55    |
| 201502            | 44    | 24.31                          | 22.64                                        | 0.87    | 201502                 | 21    | 12.78                          | 11.41                                        | 0.72    |
| 201503            | 64    | 25.31                          | 22.70                                        | 1.70    | 201503                 | 42    | 13.28                          | 11.41                                        | 2.52    |
| 201504            | 26    | 26.86                          | 23.39                                        | -0.04   | 201504                 | 9     | 14.56                          | 12.25                                        | -0.45   |

**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                          |                                     |         | Prince George's County |       |                          |                                     |         |
|-------------------|-------|--------------------------|-------------------------------------|---------|------------------------|-------|--------------------------|-------------------------------------|---------|
| yyyymm            | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value | yyyymm                 | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value |
| 201505            | 11    | 27.42                    | 23.11                               | -0.71   | 201505                 | 4     | 14.39                    | 12.10                               | -0.86   |
| 201506            | 10    | 27.67                    | 22.88                               | -0.77   | 201506                 | 14    | 14.09                    | 12.05                               | -0.01   |
| 201507            | 10    | 27.78                    | 22.78                               | -0.78   | 201507                 | 14    | 14.47                    | 11.82                               | -0.04   |
| 201508            | 18    | 28.00                    | 22.56                               | -0.44   | 201508                 | 7     | 14.46                    | 11.65                               | -0.64   |
| 201509            | 11    | 28.36                    | 22.28                               | -0.78   | 201509                 | 6     | 14.57                    | 11.55                               | -0.74   |
| 201510            | 20    | 28.56                    | 22.09                               | -0.39   | 201510                 | 15    | 14.69                    | 11.44                               | 0.03    |
| 201511            | 18    | 28.53                    | 22.10                               | -0.48   | 201511                 | 12    | 14.94                    | 11.34                               | -0.26   |
| 201512            | 29    | 27.86                    | 22.05                               | 0.05    | 201512                 | 25    | 14.83                    | 11.35                               | 0.90    |
| 201601            | 39    | 28.28                    | 21.92                               | 0.49    | 201601                 | 58    | 15.31                    | 11.41                               | 3.74    |
| 201602            | 95    | 28.97                    | 21.85                               | 3.02    | 201602                 | 55    | 16.77                    | 13.40                               | 2.85    |
| 201603            | 47    | 31.36                    | 24.18                               | 0.65    | 201603                 | 32    | 18.09                    | 14.80                               | 0.94    |
| 201604            | 16    | 32.33                    | 24.08                               | -0.68   | 201604                 | 12    | 18.89                    | 14.77                               | -0.47   |
| 201605            | 24    | 32.53                    | 23.92                               | -0.36   | 201605                 | 13    | 19.11                    | 14.60                               | -0.42   |
| 201606            | 23    | 32.94                    | 23.62                               | -0.42   | 201606                 | 12    | 18.94                    | 14.42                               | -0.48   |
| 201607            | 6     | 33.53                    | 23.09                               | -1.19   | 201607                 | 7     | 19.19                    | 14.22                               | -0.86   |
| 201608            | 11    | 33.44                    | 23.19                               | -0.97   | 201608                 | 13    | 19.28                    | 14.13                               | -0.44   |
| 201609            | 10    | 33.22                    | 23.37                               | -0.99   | 201609                 | 11    | 19.47                    | 13.99                               | -0.61   |
| 201610            | 26    | 33.11                    | 23.47                               | -0.30   | 201610                 | 17    | 19.44                    | 14.01                               | -0.17   |
| 201611            | 66    | 33.28                    | 23.40                               | 1.40    | 201611                 | 31    | 19.17                    | 13.95                               | 0.85    |
| 201612            | 89    | 32.31                    | 21.12                               | 2.68    | 201612                 | 70    | 19.47                    | 14.09                               | 3.59    |
| 201701            | 116   | 33.14                    | 22.73                               | 3.65    | 201701                 | 100   | 20.61                    | 16.36                               | 4.85    |
| 201702            | 102   | 35.69                    | 26.53                               | 2.50    | 201702                 | 58    | 22.75                    | 21.04                               | 1.68    |
| 201703            | 81    | 37.75                    | 28.69                               | 1.51    | 201703                 | 52    | 23.83                    | 21.83                               | 1.29    |
| 201704            | 55    | 39.08                    | 29.57                               | 0.54    | 201704                 | 45    | 24.81                    | 22.30                               | 0.91    |
| 201705            | 35    | 40.11                    | 29.46                               | -0.17   | 201705                 | 26    | 25.64                    | 22.48                               | 0.02    |
| 201706            | 41    | 40.06                    | 29.47                               | 0.03    | 201706                 | 8     | 26.03                    | 22.36                               | -0.81   |
| 201707            | 24    | 40.00                    | 29.46                               | -0.54   | 201707                 | 14    | 26.03                    | 22.36                               | -0.54   |
| 201708            | 58    | 39.64                    | 29.58                               | 0.62    | 201708                 | 21    | 26.22                    | 22.22                               | -0.24   |
| 201709            | 39    | 40.31                    | 29.72                               | -0.04   | 201709                 | 33    | 26.44                    | 22.12                               | 0.30    |
| 201710            | 51    | 40.78                    | 29.55                               | 0.35    | 201710                 | 44    | 27.19                    | 21.86                               | 0.77    |
| 201711            | 134   | 41.47                    | 29.49                               | 3.14    | 201711                 | 76    | 28.00                    | 21.93                               | 2.19    |
| 201712            | 173   | 44.19                    | 33.25                               | 3.87    | 201712                 | 129   | 29.64                    | 23.25                               | 4.27    |
| 201801            | 214   | 47.31                    | 39.52                               | 4.22    | 201801                 | 125   | 32.17                    | 28.54                               | 3.25    |
| 201802            | 210   | 51.00                    | 48.05                               | 3.31    | 201802                 | 99    | 34.19                    | 32.33                               | 2.00    |
| 201803            | 129   | 55.61                    | 54.85                               | 1.34    | 201803                 | 58    | 36.36                    | 33.99                               | 0.64    |
| 201804            | 99    | 57.42                    | 56.19                               | 0.74    | 201804                 | 51    | 36.81                    | 34.17                               | 0.42    |
| 201805            | 34    | 59.44                    | 56.34                               | -0.45   | 201805                 | 37    | 37.97                    | 33.91                               | -0.03   |
| 201806            | 55    | 60.08                    | 55.90                               | -0.09   | 201806                 | 21    | 38.89                    | 33.41                               | -0.54   |
| 201807            | 59    | 61.33                    | 55.25                               | -0.04   | 201807                 | 11    | 39.08                    | 33.28                               | -0.84   |
| 201808            | 37    | 62.69                    | 54.55                               | -0.47   | 201808                 | 30    | 39.00                    | 33.34                               | -0.27   |
| 201809            | 60    | 63.22                    | 54.19                               | -0.06   | 201809                 | 17    | 39.64                    | 32.93                               | -0.69   |
| 201810            | 89    | 64.58                    | 53.45                               | 0.46    | 201810                 | 42    | 39.94                    | 32.66                               | 0.06    |
| 201811            | 109   | 66.50                    | 53.04                               | 0.80    | 201811                 | 74    | 40.69                    | 32.38                               | 1.03    |
| 201812            | 260   | 69.03                    | 52.83                               | 3.61    | 201812                 | 137   | 42.42                    | 32.46                               | 2.91    |
| 201901            | 229   | 75.44                    | 61.20                               | 2.51    | 201901                 | 182   | 45.53                    | 35.92                               | 3.80    |
| 201902            | 260   | 80.72                    | 65.97                               | 2.72    | 201902                 | 120   | 48.97                    | 42.50                               | 1.67    |
| 201903            | 182   | 85.31                    | 72.41                               | 1.34    | 201903                 | 99    | 50.78                    | 44.11                               | 1.09    |

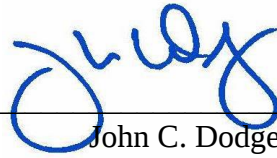
**Case No. 9035**  
**59th Quarterly Report**  
**Montgomery and Prince George's County**  
**Z-Value Calculation**

| Montgomery County |       |                          |                                     |         | Prince George's County |       |                          |                                     |         |
|-------------------|-------|--------------------------|-------------------------------------|---------|------------------------|-------|--------------------------|-------------------------------------|---------|
| yyyymm            | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value | yyyymm                 | Total | Rolling 36 Month Average | Rolling 36 Month Standard Deviation | Z Value |
| 201904            | 59    | 89.06                    | 73.85                               | -0.41   | 201904                 | 38    | 52.64                    | 44.71                               | -0.33   |
| 201905            | 34    | 90.25                    | 72.98                               | -0.77   | 201905                 | 19    | 53.36                    | 44.24                               | -0.78   |
| 201906            | 23    | 90.53                    | 72.74                               | -0.93   | 201906                 | 16    | 53.53                    | 44.09                               | -0.85   |
| 201907            | 21    | 90.53                    | 72.74                               | -0.96   | 201907                 | 19    | 53.64                    | 43.99                               | -0.79   |
| 201908            | 27    | 90.94                    | 72.28                               | -0.88   | 201908                 | 15    | 53.97                    | 43.67                               | -0.89   |
| 201909            | 53    | 91.39                    | 71.82                               | -0.53   | 201909                 | 26    | 54.03                    | 43.62                               | -0.64   |
| 201910            | 102   | 92.58                    | 70.78                               | 0.13    | 201910                 | 38    | 54.44                    | 43.27                               | -0.38   |
| 201911            | 117   | 94.69                    | 69.87                               | 0.32    | 201911                 | 65    | 55.03                    | 42.89                               | 0.23    |
| 201912            | 203   | 96.11                    | 69.79                               | 1.53    | 201912                 | 111   | 55.97                    | 42.72                               | 1.29    |
| 202001            | 176   | 99.28                    | 72.00                               | 1.07    | 202001                 | 131   | 57.11                    | 43.64                               | 1.69    |
| 202002            | 164   | 100.94                   | 73.09                               | 0.86    | 202002                 | 84    | 57.97                    | 44.80                               | 0.58    |
| 202003            | 117   | 102.67                   | 73.84                               | 0.19    | 202003                 | 62    | 58.69                    | 45.01                               | 0.07    |
| 202004            | 50    | 103.67                   | 73.78                               | -0.73   | 202004                 | 53    | 58.97                    | 45.00                               | -0.13   |
| 202005            | 43    | 103.53                   | 73.88                               | -0.82   | 202005                 | 27    | 59.19                    | 44.95                               | -0.72   |
| 202006            | 43    | 103.75                   | 73.68                               | -0.82   | 202006                 | 12    | 59.22                    | 44.92                               | -1.05   |
| 202007            | 23    | 103.81                   | 73.63                               | -1.10   | 202007                 | 10    | 59.33                    | 44.80                               | -1.10   |
| 202008            | 26    | 103.78                   | 73.66                               | -1.06   | 202008                 | 14    | 59.22                    | 44.92                               | -1.01   |
| 202009            | 19    | 102.89                   | 74.42                               | -1.13   | 202009                 | 11    | 59.03                    | 45.10                               | -1.06   |
| 202010            | 10    | 102.33                   | 74.99                               | -1.23   | 202010                 | 3     | 58.42                    | 45.61                               | -1.21   |
| 202011            | 31    | 101.19                   | 76.09                               | -0.92   | 202011                 | 19    | 57.28                    | 46.49                               | -0.82   |
| 202012            | 63    | 98.33                    | 76.76                               | -0.46   | 202012                 | 51    | 55.69                    | 46.80                               | -0.10   |
| Grand Total       | 8567  |                          |                                     |         | Grand Total            | 11566 |                          |                                     |         |

The Z Value represents the (i) number of mechanical coupling leaks initiated during the current month -  
(ii) the average number of monthly leaks over the prior 36 months/the standard deviation of monthly leaks  
over the prior 36 months.

**CERTIFICATE OF SERVICE**

I, the undersigned counsel, hereby certify that on January 15, 2021, copies of the foregoing 59<sup>th</sup> *Quarterly Report of Washington Gas* were delivered to parties of record in this proceeding by electronic mail.



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John C. Dodge