



**PHILADELPHIA GAS WORKS**

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November 25, 2014

Administrative Law Judge Eranda Vero  
Pennsylvania Public Utility Commission  
Office of Administrative Law Judge  
Suite 403  
801 Market Street  
Philadelphia, PA 19107

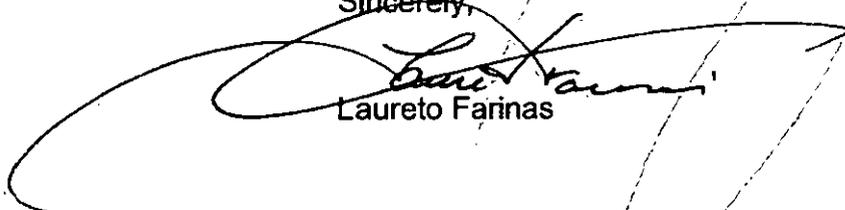
**RE: Michael Prendergast v. PGW, Docket No. F- 2012 – 2317187**

Dear Judge Vero:

Pursuant to your instruction at the conclusion of the hearing on remand of November 18, 2014 in the above referenced matter, enclosed please find the supplemental information for PGW Exhibit 11. It is further explanation of the variation in Cubic Feet per Degree Day of the figures 7.9 and 8.1 appearing in two calculations on PGW Exhibit 11. This information was prepared by PGF Witness Tiffany Higgins, Mgr., Customer Review Unit – PGW.

If you need additional information about this matter, please contact me at my direct-dial number above. Thank you.

Sincerely,

  
Laureto Farinas

cc: Service List  
Tiffany Higgins (PGW Mail)  
Linda Pereira  
Wendy Vacca

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### Gas Usage Analysis Explanation

A gas usage analysis is a resource used to analyze a customer's gas consumption and usage patterns at a property. There are several different variables utilized (dates, meter readings, number of days, weather conditions, etc.) when reviewing a customer's gas consumption. Considering the complexity of the gas usage analysis, provided below are definitions, instructions and calculations to assist with better understanding all that's contained in the analysis.

- **Non-heating daily usage:** The non-heating daily usage is determined by reviewing summer time usage at a given premise. Since there is no heat used during summer months, the non-heating daily usage represents the estimated combined usage per day for non-heating gas appliances. For example, Mr. Prendergast's non-heating daily usage is currently 0.64 based on a review of the most recent summer time consumption.
- **Dates:** These are the dates of the meter readings that are listed in the meter readings columns.
- **Meter Readings:** These are the meter readings obtained on a specific date.
- **Number of Days:** This number represents the number of days covered by the start and end date of the meter readings.
- **Usage in CCF:** The number contained in this column represents the total amount of gas used for the specified time period measured in 100 cubic feet (aka CCF).

*How to Calculate:* To obtain the usage in CCF you subtract the "To" meter reading from the "From" meter reading.

- **Domestic usage CCF:** The number contained in this column represents the analysis' estimate of non-heating usage exclusively for any specified time period.

*How to Calculate:* To obtain the domestic usage in CCF you multiply the non-heating daily gas usage average per degree day (0.64 located at the top of the analysis) by the number of days for the specific time period.

- **Heat usage CCF:** The number contained in this column represents the analysis' estimate of heating usage exclusively for any specified time period and is measured in CCF (hundred cubic feet).

*How to Calculate:* To obtain the heating usage in CCF you subtract the domestic usage in CCF from the total CCF for the specified time period.

- **Number of degree days:**

According to the National Oceanic & Atmospheric Agency (NOAA) a degree day is “a quantitative index demonstrated to reflect demand for energy to heat or cool houses and businesses.”

*How to Calculate:* To obtain the heating degree days for a particular day, take the average of the day’s high and low temperature. If the number is above 65, there are no heating degree days that day. However, if the number is less than 65, subtract it from 65 to find the number of heating degree days. For example, if the day’s high temperature is 60 and the low is 40, the average temperature is 50 degrees. 65 minus 50 is 15 heating degree days. (This information is recorded and maintained by NOAA.)

- **CFDD: Cubic Feet of gas used per Degree Day (CFDD).** The number in this column represents the analysis’ estimate of cubic feet of gas consumed per degree day.

*How to Calculate:* To obtain the CFDD you divide the heat usage in CCF by the number of degree days. Once you make the calculation, you have to move the decimal two places to the right because the gas is measured in 100 cubic feet.

**Source:**

National Oceanic & Atmospheric Agency  
24 Jan. 2005. Web. 18 Nov. 2014

<[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/cdus/degree\\_days/ddayexp.shtml](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/degree_days/ddayexp.shtml)>

Administrative Law Judge Eranda Vera's question:

With the gas usage analysis for Michael Prendergast, why is there a difference in the average CFDD of 7.9 for rows 11, 12, & 13(3/26/2012 to 3/12/2013, 3/12/2013 to 3/12/2014, & 3/12/2014 to 11/6/2014) in comparison to 8.1 CFDD in row 16 (3/26/2012 to 11/6/2014)?

**Answer:**

The most feasible way to provide a response is to break down the calculations manually.

*Number of days*

If you calculate the total the number of days in rows 11, 12, and 13 you will get 955 (351 + 365 + 239), which is the exact same number of days in row 16.

*Usage CCF*

If you calculate the total usage in CCF in rows 11, 12, and 13 you will get 1416 (501 + 679 + 236), which is the exact same number of days in row 16.

*Domestic usage CCF*

If you calculate the total domestic usage CCF in rows 11, 12, and 13 you will get 612 (225 + 234 + 153), which is one more than 611 in row 16. This difference is attributed to the effect of rounding.

- Row 11 domestic usage calculation is  $0.64 \times 351 = 224.64$  and the analysis rounded up to the nearest whole number 225
- Row 12 domestic usage calculation is  $0.64 \times 365 = 233.6$  and the analysis rounded up to the nearest whole number 234
- Row 13 domestic usage is calculation is  $0.64 \times 239 = 152.96$  and the analysis rounded up to the nearest whole number 153.
- Row 16 domestic usage is calculation is  $0.64 \times 969 = 620.16$  and the analysis calculated 620.

As a result of the analysis rounding up the domestic usage to the nearest whole number in rows 11, 12 & 13, the total domestic usage of rows 11, 12, & 13 (225 + 234 + 153) is 612, which is one more than the 611 in row 16.

*Heat usage CCF*

If you calculate the total heat usage in CCF in rows 11, 12 & 13 (276 + 445 + 83) you get 804, which is one less than 805 in row 16. The difference is attributed to the effect of rounding.

- Row 11 heat usage calculation is  $501 - 225 = 276$  and the analysis calculated 276
- Row 12 heat usage calculation is  $679 - 234 = 445$  and the analysis calculated 445

- Row 13 heat usage calculation is  $236 - 153 = 83$  and the analysis calculated 83.
- Row 16 heat usage calculation is  $800 - 620 = 180$  and the analysis calculated 180.

In summary, the total heat usage in CCF of rows 11 through 13 is 804 (one less than 805 in row 16) because the total domestic usage of rows 11 through 13 was 612 due to the effect of rounded, which is one more than 611 in row 16.

#### *Number Degree Days*

Rows 11, 12, 13, & 16 degrees days were obtained from NOAA as stated above earlier.

#### *CFDD*

- Row 11 CFDD calculation is  $276 / 3903 = 0.0707$  which is equivalent to 7.07 and the analysis rounded up to 7.1
- Row 12 CFDD calculation is  $445 / 4866 = 0.0914$  which is equivalent to 9.14 and the analysis rounded up to 9.2
- Row 13 CFDD calculation is  $83 / 1119 = 0.0741$  which is equivalent to 7.41 and the analysis calculated 7.4
- Row 16 CFDD calculation is  $805 / 9888 = 0.0814$  which is equivalent to 8.14 and the analysis calculated 8.1

In summary, the average CFDD of rows 11, 12, & 13 is 7.9 in comparison to 8.1 of row 16, which is attributed to the effect of rounding.

Heat & Domestic

| GAS USAGE ANALYSIS OF ACCOUNT   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
|---|-----------|-----------------|-------|-----------------------|----------------------|--------------------|----------------|--------------------|-------------|---------------------------------------|
|   |           |                 |       | Customer Name:        | Michael Prendergast  |                    |                |                    |             |                                       |
|   |           |                 |       | Address:              | 12101 Elmore Terrace |                    |                |                    |             |                                       |
|   |           |                 |       | Account Number:       | 0091 1343 6417       |                    |                |                    |             |                                       |
|   |           |                 |       | Heat & Domestic Usage |                      |                    |                |                    |             |                                       |
|   |           |                 |       | DAILY USAGE           |                      |                    |                |                    |             |                                       |
|   |           |                 |       | 0.64                  | CCF PER DAY          |                    |                |                    |             |                                       |
| DATES:  |           | METER READINGS: |       | NUMBER OF DAYS        | USAGE IN CCF         | DOMESTIC USAGE CCF | HEAT USAGE CCF | NUMBER DEG. DAYS** | C.F.D.D.*** |                                       |
| FROM  | TO        | FROM            | TO    |                       |                      |                    |                |                    |             |                                       |
| 3/9/2002  | 3/11/2003 | 3668            | 4766  | 367                   | 1098                 | 235                | 863            | 4984               | 17.3        | Before correction. Average CFDD: 15.7 |
| 3/11/2003   | 3/10/2004 | 4766            | 5857  | 365                   | 1091                 | 234                | 857            | 4620               | 18.6        |                                       |
| 3/10/2004   | 3/9/2005  | 5857            | 6778  | 364                   | 921                  | 233                | 688            | 4550               | 15.1        |                                       |
| 3/9/2005  | 3/13/2006 | 6778            | 7530  | 369                   | 752                  | 236                | 516            | 4431               | 11.6        |                                       |
| 3/13/2006   | 3/13/2007 | 7530            | 7849  | 365                   | 319                  | 234                | 85             | 4313               | 2.0         |                                       |
| 3/13/2007   | 3/11/2008 | 7849            | 8189  | 364                   | 340                  | 233                | 107            | 4272               | 2.5         | Before correction. Average CFDD: 1.8  |
| 3/11/2008   | 3/11/2009 | 8189            | 8441  | 365                   | 252                  | 234                | 18             | 4617               | 0.4         |                                       |
| 3/11/2009   | 3/10/2010 | 8441            | 8798  | 364                   | 357                  | 233                | 124            | 4505               | 2.8         |                                       |
| 3/10/2010   | 3/11/2011 | 8798            | 9156  | 366                   | 358                  | 234                | 124            | 4379               | 2.8         |                                       |
| 3/11/2011   | 3/12/2012 | 9156            | 9415  | 367                   | 259                  | 235                | 24             | 3794               | 0.6         |                                       |
| 3/26/2012   | 3/12/2013 | 1659            | 2160  | 351                   | 501                  | 225                | 276            | 3903               | 7.1         | After correction. Average CFDD: 7.9   |
| 3/12/2013   | 3/12/2014 | 225             | 904   | 365                   | 679                  | 234                | 445            | 4866               | 9.2         |                                       |
| 3/12/2014   | 11/6/2014 | 904             | 1140  | 239                   | 236                  | 153                | 83             | 1119               | 7.4         |                                       |
| 5/11/2006   | 3/26/2012 | 7638            | 11659 | 2146                  | 4021                 | 1373               | 2648           | 25317              | 10.5        | Make-Up Bill with a wrap              |
| 6/12/2006   | 2/9/2012  | 7654            | 9415  | 2068                  | 1761                 | 1324               | 437            | 24475              | 1.8         | CFDD baseline for projection          |
| 3/26/2012   | 11/6/2014 | 0               | 1416  | 955                   | 1416                 | 611                | 805            | 9888               | 8.1         | Actual                                |
| 3/12/2012   | 11/6/2014 | 9415            | 10215 | 969                   | 800                  | 620                | 180            | 9976               | 1.8         | Projected use without correction      |
| * CCF = hundred Cubic feet  |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| ** DEGREE DAYS AN INDEX OF ENERGY CONSUMPTION FOR HEATING .   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| IT INDICATES THE NUMBER OF DEGREES THE AVERAGE TEMPERATURE DROPS BELOW 65° F.   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| ***CFDD EQUALS CUBIC FEET OF GAS USED PER DEGREE DAY  |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| Notes:  |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| 6/12/06 Magnetic counts begin   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| 3/26/12 ERT Re-programmed to index 1659   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| 1/2/13 Meter exchange, remove index 1935  |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| Before: 3/9/02 - 3/13/06 average CFDD is 15.7   |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| After: 3/26/12 - 11/6/14 CFDD is 8.1  |           |                 |       |                       |                      |                    |                |                    |             |                                       |
| PGW's Position: The customer used 10.5 CFDD for the make-up bill period. In comparison, a review of the usage pattern after the make-up bill indicates that the customer used 8.1 CFDD. The usage is comparable. The usage pattern after the correction is slightly lower (2.4 CFDD lower) than the make-up bill. The reason the cubic feet per degree day is slightly lower can be attributed to two factors. 1. The initial time period (make-up bill) is vastly different than the time period after the correction. 2. The make-up bill time period is longer and contains more degree days or colder weather conditions. |           |                 |       |                       |                      |                    |                |                    |             |                                       |

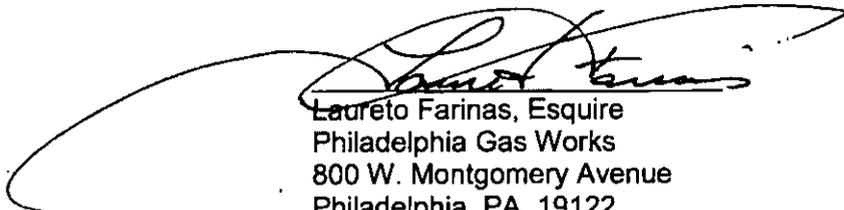
**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY THAT I HAVE THIS DAY SERVED A TRUE COPY OF THE FOREGOING DOCUMENT UPON THE PARTICIPANTS LISTED BELOW, IN ACCORDANCE WITH THE REQUIREMENTS OF 52 PA CODE §1.54 (RELATING TO SERVICE BY A PARTICIPANT).

For Complainant:

Mr. Michael Prendergast  
12101 Elmore Terrace  
Philadelphia, PA 19154

November 25, 2014



Laureto Farinas, Esquire  
Philadelphia Gas Works  
800 W. Montgomery Avenue  
Philadelphia, PA 19122  
(215) 684-6982