

Philadelphia Gas Works
Before The
Pennsylvania Public Utility Commission

**Computation of Annual Purchased Gas Costs
For Twelve Months Ending August 31, 2021**

66 Pa.C.S. § 1307(f)

Information Submitted Pursuant To:

**66 Pa.C.S. §§ 1307(f), 1317, 1318 and
52 Pa. Code § 53.61, et seq.**

February 1, 2020

Philadelphia Gas Works 1307f - 2019 Prefiling

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Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

- (5) A listing and updating, if necessary, of projections of gas supply and demand provided to the Commission for any purpose—see § 59.67 (relating to formats). In addition, provide an accounting of the difference between reported gas supply available and gas supply deliverable—including storage—from the utility to its customers under various circumstances and time periods.

Response:

Please see the attached document. PGW's next Annual Resource Planning Report (Forms 1 and 2) is due for submission to the Commission on March 1, 2020, and an updated Annual Resource Planning Report is not available at this time.

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

March 2019

Forms 1 & 2

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122**

ANNUAL RESOURCE PLANNING REPORT
MARCH 2019

Forms 1 & 2

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81**

PHILADELPHIA GAS WORKS

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| 2 | 59.81 | Forms IRP-Gas 1A, and 1B Annual and Peak Day Energy Demand |
| 3 | 59.81 | Forms IRP-Gas 2A, 2B, and 2C Annual and Peak Day Energy Resources, And transmission and storage contracts |

Section 59.81: **General**

Pursuant to Section 59.81 (a), each major jurisdictional gas utility must file an annual resource planning report (ARPR) on or before June 1, 1996 and June 1 of each succeeding year, except Form 1A/2A which filing date is March 1. The report must be submitted to:

Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

One courtesy copy should also be submitted to:

Pennsylvania Public Utility Commission
Conservation, Economics and Energy Planning
P.O. Box 3265
Harrisburg, PA 17105-3265

Also submit one (1) copy to the following:

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1921

Office of Small Business Advocate
Suite 202, Commerce Building
300 N. Second Street
Harrisburg, PA 17101

Be sure to indicate the name and telephone number of at least one individual at the company who is familiar with the filing and will be available to answer any questions the Commission staff may have. You may also wish to list those individuals who are directly involved in the preparation of the various document components.

Information contained in annual resource planning reports must be utility-specific. The report should follow an outline similar to that which is contained herein, with narrative accompanying the required data. Forms may be modified to accommodate wide columns of numbers and enhance readability, but the general format should be used to maintain consistency.

This information is not generally considered confidential. Utilities are obligated to provide complete information. However, we will treat as confidential those portions of the report designated by the utility as proprietary. If a utility's proprietary claim is challenged, the Commission will direct the utility to file a petition for protective order pursuant to 52 PA Code 5.423.

All questions concerning the reporting requirements for Forms IRP Gas 1A through 9 should be addressed to Pennsylvania Public Utility Commission Bureau of Conservation, Economics and Energy Planning.

Response:

Forms 1A, 1B, 2A, 2b, and 2C along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the March 1 filing.

All questions concerning the ARPR should be directed to Mr. Kenneth Dybalski, Vice President, Energy Planning & Technical Compliance at 215-684-6317. The following individual is available to answer questions concerning Forms 1 and 2: Ms. Maria Hogan, Director – Gas Planning & Rates at (215) 684-6618.

Section 59.81 **Forms IRP-Gas 1A, and 1B – Annual and Peak Day Demand**

The load growth projections shall reflect the effects of price elasticity, market induced conservation, building and appliance efficiency standards, and the effects of the utility's existing and planned conservation and load management activities.

Response: Please see the attached documentation and forms.

**FORM-IRP-GAS-1A: ANNUAL GAS REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)**

| Index Year Actual Year | Historical Data | | Current Year | Three Year Forecast | | |
|--|-----------------|-----------------|----------------|---------------------|----------------|----------------|
| | -2 2016-2017 | -1 2017-2018 | 0 2018-2019 | 1 2019-2020 | 2 2020-2021 | 3 2021-2022 |
| Firm Requirements: | | | | | | |
| Retail Residential | 32,668 | 36,167 | 36,342 | 35,794 | 35,983 | 36,198 |
| Retail Commercial | 7,178 | 7,875 | 7,960 | 7,735 | 7,707 | 7,686 |
| Retail Industrial | 378 | 476 | 524 | 495 | 487 | 479 |
| Electric Power Generation | - | - | - | - | - | - |
| Exchanges with Other Utilities | - | - | - | - | - | - |
| Unaccounted For Gas | 1,715 | 1,083 | 1,391 | 1,393 | 1,360 | 1,367 |
| Company Use | 254 | 264 | 277 | 252 | 252 | 252 |
| Other - Prior Period Adjustment | - | - | - | - | - | - |
| Subtotal Firm | 42,194 | 45,864 | 46,494 | 45,669 | 45,789 | 45,983 |
| Interruptible Requirements: | | | | | | |
| Retail | 27 | 166 | 380 | 500 | 500 | 500 |
| Electric Power Generation | - | - | - | - | - | - |
| Company's Own Plant | 50 | 62 | 86 | 106 | 105 | 106 |
| Unaccounted For Gas | 1 | 1 | 12 | 16 | 13 | 15 |
| Subtotal Interruptible | 79 | 228 | 478 | 622 | 619 | 620 |
| SUBTOTAL FIRM AND INTERRUPTIBLE | 42,273 | 46,093 | 46,973 | 46,291 | 46,408 | 46,603 |
| Transportation: | | | | | | |
| Firm Residential | 60 | 135 | 1,391 | 1,023 | 1,023 | 1,023 |
| Firm Commercial | 4,138 | 4,510 | 4,842 | 4,691 | 4,702 | 4,713 |
| Firm Industrial | 430 | 428 | 440 | 469 | 476 | 484 |
| Interruptible Residential | - | - | - | 14 | 14 | 14 |
| Interruptible Commercial | 6,694 | 8,341 | 7,774 | 7,875 | 7,875 | 7,875 |
| Interruptible Industrial | 5,956 | 5,492 | 6,028 | 5,897 | 5,897 | 5,897 |
| Other - Non-Utility Power Producers | 11,991 | 11,829 | 12,912 | 12,341 | 12,300 | 12,300 |
| Subtotal Transportation | 29,269 | 30,735 | 33,387 | 32,308 | 32,287 | 32,305 |
| TOTAL GAS REQUIREMENTS | 71,541 | 76,828 | 80,359 | 78,600 | 78,695 | 78,909 |
| Increase (Decrease) | 3,936 | 5,286 | 3,532 | (1,760) | 95 | 214 |
| Percent Change (%) | 5.82% | 7.39% | 4.60% | -2.19% | 0.12% | 0.27% |

**FORM-IRP-GAS-1B:PEAK DAY REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)**

| Index Year Actual Year | Historical Data | | Current Year ⁽²⁾ | Three Year Forecast ⁽¹⁾ | | |
|--|-----------------|-----------------|-----------------------------|------------------------------------|----------------|----------------|
| | -2 2016-2017 | -1 2017-2018 | 0 2018-2019 | 1 2019-2020 | 2 2020-2021 | 3 2021-2022 |
| Firm Requirements: | | | | | | |
| Retail Residential | 330 | 409 | 450 | 488 | 484 | 487 |
| Retail Commercial | 72 | 89 | 99 | 105 | 104 | 103 |
| Retail Industrial | 4 | 5 | 6 | 7 | 7 | 6 |
| Electric Power Generation | - | - | - | - | - | - |
| Exchanges with Other Utilities | - | - | - | - | - | - |
| Unaccounted For Gas | 17 | 12 | 17 | 19 | 18 | 18 |
| Company Use | 3 | 3 | 3 | 3 | 3 | 3 |
| Other | - | - | - | - | - | - |
| Subtotal Firm | 426 | 518 | 576 | 623 | 616 | 619 |
| Interruptible Requirements: | | | | | | |
| Retail | - | 3.7 | 1.5 | 1.4 | 1.4 | 1 |
| Electric Power Generation | - | - | - | - | - | - |
| Company's Own Plant | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0 |
| Unaccounted For Gas | 0.0 | 0.1 | - | 0.1 | 0.1 | 0.1 |
| Subtotal Interruptible | 0.4 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| SUBTOTAL FIRM AND INTERRUPTIBLE | 426 | 522 | 578 | 625 | 618 | 621 |
| Transportation: | | | | | | |
| Firm Residential | 0 | 10 | 21 | 5 | 15 | 15 |
| Firm Commercial | 33 | 33 | 47 | 49 | 49 | 49 |
| Firm Industrial | 3 | 3 | 4 | 5 | 5 | 5 |
| Interruptible Residential | - | - | - | - | - | - |
| Interruptible Commercial | 45 | 49 | - | - | - | - |
| Interruptible Industrial | 22 | 25 | - | - | - | - |
| Other - Non-Utility Power Producers | 46 | 41 | - | - | - | - |
| Subtotal Transportation | 150 | 162 | 72 | 59 | 69 | 69 |
| TOTAL GAS REQUIREMENTS | 577 | 684 | 649 | 684 | 687 | 690 |
| Increase (Decrease) | | 107 | (35) | 34 | 3 | 3 |
| Percent Change (%) | | 18.6% | -5.1% | 5.3% | 0.4% | 0.5% |

(1) Peak Day is forecasted at a 2 degree temperature.

(2) Current Year Peak Day is forecasted at a 5 degree temperature.

Section 59.81

Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts

The forecast of energy sources shall indicate sources of all presently available and new supplies which the utility estimates will become available, displayed by component parts.

Response:

Please see the attached documentation and forms.

FORM-IRP-GAS-2A: ANNUAL/PEAK SUPPLY
TABLE 1: ANNUAL/PEAK SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

| Index Year Actual Year | Historical Data | | | | Current Year (2) | | Three Year Forecast (1) | | | | | |
|--|-----------------|------------|-----------------|------------|------------------|------------|-------------------------|------------|----------------|------------|----------------|------------|
| | -2 2016-2017 | | -1 2017-2018 | | 0 2018-2019 | | 1 2019-2020 | | 2 2020-2021 | | 3 2021-2022 | |
| | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak |
| Gas Supply for Sales Service | | | | | | | | | | | | |
| Spot Purchases | 45,387 | 167 | 45,114 | 189 | 48,515 | 250 | 47,205 | 243 | 47,204 | 239 | 48,035 | 269 |
| Storage Withdrawals | 10,269 | 169 | 12,385 | 166 | 14,397 | 184 | 14,673 | 188 | 14,918 | 191 | 14,777 | 161 |
| LNG Withdrawal | 1,357 | 77 | 2,517 | 167 | 1,767 | 197 | 2,231 | 233 | 2,091 | 236 | 2,131 | 239 |
| LNG Purchases | - | - | - | - | - | - | - | - | - | - | - | - |
| Exchanges with other LDCs | - | - | - | - | - | - | - | - | - | - | - | - |
| Other | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Gas Supply | 57,012 | 414 | 60,016 | 522 | 64,679 | 632 | 64,109 | 664 | 64,214 | 666 | 64,943 | 669 |
| Total Transportation Services | 29,269 | 161 | 30,735 | 162 | 33,387 | 30 | 32,308 | 32 | 32,287 | 33 | 32,305 | 34 |
| TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE | 86,281 | 577 | 90,750 | 684 | 98,065 | 661 | 96,417 | 696 | 96,500 | 699 | 97,249 | 703 |
| Deductions | | | | | | | | | | | | |
| Pipeline: TRANS FUEL | 998 | - | 874 | - | 1,055 | 7 | 1,053 | 7 | 1,049 | 7 | 1,075 | 8 |
| Storage: INJ, INJ FUEL, WITHDRAW FUEL, TRANS FUEL | 11,314 | - | 11,074 | - | 14,391 | 1 | 14,598 | 2 | 15,353 | 2 | 14,981 | 1 |
| LNG: LIQUE, INJ FUEL, TRANS FUEL | 2,428 | - | 1,974 | - | 2,260 | 3 | 2,167 | 4 | 1,404 | 4 | 2,284 | 4 |
| Sales to other LDC's | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Deductions | 14,739 | - | 13,923 | - | 17,706 | 12 | 17,818 | 13 | 17,806 | 13 | 18,340 | 13 |
| NET GAS SUPPLY | 71,541 | 577 | 76,828 | 684 | 80,359 | 649 | 78,600 | 684 | 78,695 | 687 | 78,909 | 690 |
| BTU | 1.037 | | 1.037 | | 1.036 | | 1.039 | | 1.039 | | 1.039 | |

(1) Peak Day is forecasted at a 2 degree temperature.

(2) Current Year Peak Day is forecasted at a 5 degree temperature.

**FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)**

| Index Year Actual year | Historical Data | | | | Current Year | | Three Year Forecast | | | | | |
|--|-----------------|------------|-----------------|------------|----------------|------------|---------------------|------------|----------------|------------|----------------|------------|
| | -2 2016-2017 | | -1 2017-2018 | | 0 2018-2019 | | 1 2019-2020 | | 2 2020-2021 | | 3 2021-2022 | |
| | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak |
| City Gate Transportation Contracts: | | | | | | | | | | | | |
| Transcontinental Transmission Corp. | 3,977 | 59 | 3,977 | 59 | 3,980 | 59 | 3,969 | 59 | 3,969 | 59 | 3,969 | 59 |
| Texas Eastern Transmission Corp. | 2,237 | 43 | 2,237 | 43 | 2,243 | 43 | 2,237 | 42 | 2,237 | 42 | 2,237 | 42 |
| Texas Eastern Transmission Corp. | 719 | 20 | 719 | 20 | - | 20 | - | 20 | - | 20 | - | 20 |
| Transcontinental Transmission Corp. | 441 | 5 | 441 | 5 | 442 | 5 | 441 | 5 | 441 | 5 | 441 | 5 |
| Total | 7,374 | 127 | 7,374 | 127 | 6,666 | 127 | 6,647 | 127 | 6,647 | 127 | 6,647 | 127 |
| Upstream Transportation Contracts: | | | | | | | | | | | | |
| Transcontinental Transmission Corp. | 58,151 | 159 | 58,151 | 159 | 58,207 | 159 | 58,039 | 159 | 58,198 | 159 | 58,039 | 159 |
| Texas Eastern Transmission Corp. | 26,471 | 72 | 26,471 | 72 | 26,424 | 72 | 26,347 | 72 | 26,420 | 72 | 26,347 | 72 |
| Texas Eastern Transmission Corp. | 8,408 | 23 | 8,408 | 23 | 8,393 | 23 | 8,369 | 23 | 8,392 | 23 | 8,369 | 23 |
| Texas Eastern Transmission Corp. | 2,569 | 17 | 2,569 | 17 | 2,571 | 17 | 2,564 | 17 | 2,564 | 17 | 2,564 | 17 |
| Texas Eastern Transmission Corp. | 2,569 | 17 | 2,569 | 17 | 2,571 | 17 | 2,564 | 17 | 2,564 | 17 | 2,564 | 17 |
| Transcontinental Transmission Corp. | 171 | 2 | 171 | 2 | 171 | 2 | 170 | 2 | 170 | 2 | 170 | 2 |
| Texas Eastern Transmission Corp. | 1,765 | 5 | 1,765 | 5 | 1,762 | 5 | 1,756 | 5 | 1,761 | 5 | 1,756 | 5 |
| Total | 100,102 | 296 | 100,102 | 296 | 100,099 | 297 | 99,810 | 296 | 100,069 | 296 | 99,810 | 296 |
| Storage-Related Transportation Contracts: | | | | | | | | | | | | |
| Dominion Transmission Inc. | 9,074 | 25 | 9,074 | 25 | 9,058 | 25 | 9,032 | 25 | 9,056 | 25 | 9,032 | 25 |
| Dominion Transmission Inc. | 2,749 | 8 | 2,749 | 8 | 2,744 | 8 | 2,736 | 7 | 2,743 | 7 | 2,736 | 7 |
| Total | 11,822 | 32 | 11,822 | 32 | 11,802 | 32 | 11,767 | 32 | 11,800 | 32 | 11,767 | 32 |

Conversions at 1039 Btu

**FORM-IRP-GAS-2C: NATURAL GAS STORAGE
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)**

| Index Year Actual year | Historical Data | | | | Current Year | | Three Year Forecast | | | | | |
|-------------------------------------|-----------------|------------|-----------------|------------|----------------|------------|---------------------|------------|----------------|------------|----------------|------------|
| | -2 2016-2017 | | -1 2017-2018 | | 0 2018-2019 | | 1 2019-2020 | | 2 2020-2021 | | 3 2021-2022 | |
| | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak | Annual | Peak |
| Transcontinental Transmission Corp. | 3,977 | 59 | 3,977 | 59 | 3,980 | 59 | 3,969 | 59 | 3,969 | 59 | 3,969 | 59 |
| Dominion Transmission Inc. | 3,639 | 32 | 3,639 | 32 | 3,643 | 32 | 3,632 | 32 | 3,632 | 32 | 3,632 | 32 |
| Transcontinental Transmission Corp. | 3,137 | 33 | 3,137 | 33 | 3,146 | 33 | 3,137 | 33 | 3,137 | 33 | 3,137 | 33 |
| Texas Eastern Transmission Corp. | 2,409 | 43 | 2,409 | 43 | 2,412 | 43 | 2,405 | 42 | 2,405 | 42 | 2,405 | 42 |
| Texas Eastern Transmission Corp. | 2,237 | 20 | 2,237 | 20 | 2,243 | 20 | 2,237 | 20 | 2,237 | 20 | 2,237 | 20 |
| Transcontinental Transmission Corp. | 719 | 85 | 719 | 85 | - | - | - | - | - | - | - | - |
| Transcontinental Transmission Corp. | 441 | 5 | 441 | 5 | 442 | 5 | 441 | 5 | 441 | 5 | 441 | 5 |
| Total | 16,559 | 278 | 16,559 | 278 | 15,866 | 192 | 15,820 | 192 | 15,820 | 192 | 15,820 | 192 |

Forecasted Dth to Mcf Conversions at 1050 BTU.

| | Contract Expiration Date ⁽¹⁾ |
|---|--|
| Transcontinental Transmission Corp. | 3/31/2023 |
| Dominion Transmission Inc. | 3/31/2021 |
| Transcontinental Transmission Corp. | 3/31/2020 |
| Texas Eastern Transmission Corp. | 4/30/2024 |
| Texas Eastern Transmission Corp. | 4/30/2024 |
| Transcontinental Transmission Corp. (2) | 10/31/2016 |
| Transcontinental Transmission Corp. | 4/15/2020 |

⁽¹⁾ For purposes of this report, contracts that are due to expire are assumed renewed for the forecast years.

⁽²⁾ Contract terminates in 2016

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**PHILADELPHIA GAS WORKS
800 WEST MONTGOMERY AVENUE
PHILADELPHIA, PENNSYLVANIA**

Annual Resource Planning Summary Report

Filed: March 2019

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Sections 59.81-59.84**

PHILADELPHIA GAS WORKS

2019 Annual Resource Planning Summary Report

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INTRODUCTION

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SECTION V -- PGW Corporate Modeling System

Introduction

By Order entered January 11, 1996, the Pennsylvania Public Utility Commission (PUC) adopted final regulations (52 PA Code §§ 59.81 - 59.84) which set forth revised requirements for filing an Annual Resource Planning Report (the Plan). The Plan submitted represents Philadelphia Gas Works' (PGW or the Company) belief that integrated resource planning (IRP) is a workable approach to utility planning.

This plan summary contains historical data and projections for annual, winter and peak day supply to meet projected customer requirements in a least cost manner, while ensuring adequate and reliable service. It is organized into the following five sections:

- I. PGW's Overall Approach to Integrated Resource Planning
- II. Supply Forecasting Methodology and Assumptions
- III. Demand Forecasting Methodology and Assumptions
- IV. Design Day Forecasting Methodology and Assumptions
- V. PGW Corporate Modeling System

I. PGW's Overall Approach to Integrated Resource Planning

PGW Optimization Standard for Purchasing and Utilizing Gas Supplies

As reasonably anticipated PGW intends on meeting its contractual obligations to supply all of its current firm customers in its service territory on the coldest day, throughout the heating season and throughout the year. Projected customer requirements for design day and design winter conditions form the basis for capacity commitments for pipeline supply, storage, and transportation contracting.

Natural gas supplies are purchased under a portfolio approach with PGW intending to secure the lowest overall price consistent with the corporate goals of reliability and security of supply. In addition, consideration is given to maintaining a diversity of sources and types of supply, coupled with contractual and operational flexibility on both a daily and seasonal basis. Short term purchases from spot market sources are utilized to the maximum degree that they are more economical, available, and transportable.

Natural gas supplies are utilized so as to minimize gas costs subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage gas is drawn down so as to always maintain an inventory level sufficient for the remaining winter in the event that design temperature conditions should occur in the remaining segment of the winter season. Within the above parameters, priority is given to utilizing the most economical sources of supply first within the context of preserving the capability of meeting seasonal and annual demands rather than the momentary daily requirements. All facilities and sources of supply – flowing, storage and LNG – are available to achieve the intended end, namely, minimizing gas costs subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions **Basic Assumptions**

The PGW Gas Supply Policy Committee comprised of senior corporate management as well as Gas Planning, Gas Control, Gas Supply, and Regulatory departmental management, approved the aforementioned Optimization Standard for Purchasing and Utilizing Gas Supplies (Section I). All natural gas purchases continue to be made in accordance with this standard. Projected sales, revenues and natural gas expenses in this report result from this agreement, particularly in the areas of inventory valuation, priorities of gas selection and interruptible supply availability.

Incorporated into our projections are additional implementation steps involved with developing a cohesive gas supply/demand strategy for the near term and the longer range. These include developing a cost relationship comparison for current resources and a review of current contract terms and alternatives for continuing, extending, modifying or eliminating contracts.

In order to achieve this while maintaining a balance between economics and security of supply, the company uses a portfolio strategy approach. This approach incorporates a menu driven selection of services which allows the company to choose only those specific services necessary to meet its requirements. This is achieved by taking into consideration transportation capacity rights and then sources of supply are contracted to cover the firm transport rights over differing seasonal obligations.

Operating flexibility is sustained by variations in contract stipulations to permit the system to swing on the most economical gas supplies available while maintaining the ability to supply rapidly fluctuating temperature requirements. Storage facilities are substituted wherever opportunity affords to reduce annual expense for flowing 365 day pipeline service without reducing design day and design winter season delivery capability. Direct control of all storage is paramount to permit PGW to minimize winter costs by injecting lower priced purchases and to cycle storage to balance daily take fluctuations to avoid overrun/balancing charges.

II. Supply Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

PGW's supply strategy incorporates maintaining full current winter day deliverability with regard to transportation capacity but to convert, where possible, to storage rather than winter flowing contracts to enhance financial and operational flexibility. A variety of longer term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime supply requirements to meet firm customers' demands has proven to be an unreliable alternative. As a result longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 37% of the contractual daily transportation entitlements on its two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions but this diversity also allows PGW to take advantage of the pricing basis differential inherent in these supply locations.

These contracts all contain the ability to fix the price for upcoming months as well as to allow the pricing to default to an agreed upon market index when there is no market advantage in fixing a price before the month begins. PGW uses this fixed price option in conjunction with its Gas Cost Rate (GCR) filing (GCR filing includes pricing based upon the NYMEX) by always attempting to buy under the GCR forecasted prices. Through the matching of the duration supply contracts to a seasonal demand, such as the winter operating season, the firm ratepayers benefit from not paying demand charges year-round.

A second component of PGW's supply portfolio or a volume equal to 27% of pipeline capacity, is purchased gas based on the daily midpoint price published in "Platt's Gas Daily". These contracts allow for daily change in volumetric take. This allows the Company to effectively shut-off higher priced supply replacing such supply with daily cheaper spot priced gases. Under assumed normal winter conditions, PGW utilizes WSS storage field in a manner similar to third party supply. Specifically, this storage contract does not contain transportation to the PGW city gate. Therefore, these storages must flow within

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

PGW's contractual upstream capacity rights on TGPL. Delivery from these fields utilizes approximately 8% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price to counter winter price conditions since the WACOG usually reflects a winter/summer pricing differential. Additionally, PGW purchases 18% of its supply using day purchases as needed. PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW attempts to always purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first of the month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index priced supply in favor of the purchase of more advantageous daily spot purchases.

Operating conditions permitting, the Company enters into the FERC approved capacity release market to offset demand charges it pays for its firm transportation and the incremental off-systems sales market when it is economically advantageous for the firm ratepayer. In both instances, these opportunities are sought only when firm customer needs are satisfied. Additionally, PGW's bundled storages and LNG can be utilized as a substitute for higher price gas supply based on market pricing conditions and the results of PGW's status report. Effectively, the Gas Supply Group is at all times studying the market for any economic advantage it can bring to the firm ratepayer.

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions**

PGW uses a combination of four basic methods to develop demand projections. They are:

- 1) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
- 2) Customer Survey -- Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
- 3) Relative End Use -- Projections via Marketing methods of customer load sizing by appliance type, maximum input, maximum summer and winter full load hour (FLH) calculations which are used to develop yearly and monthly demand requirements.
- 4) Judgment -- Experienced opinion as applied to the evaluation of the combination of all data to develop the basic demand requirements.

Customer Demand

The total system-wide demand is a function of the projected gas demand per customer and the anticipated number of customers in each class. In determining customer demand, consideration is given to projecting current customer usage, augmented by significant gains or losses in each of numerous homogeneous groups for the period being projected. The Gas Planning Department attempts to determine for each customer class, the level of demand relating to experienced temperatures and the component of demand that is apparently not affected by changes in temperature. Within each class the most recent summer and winter usage patterns are established from historical records. Summer data provides an insight into each class of customers' non-temperature sensitive load requirements or baseload which can be expressed in terms of thousands of cubic feet (Mcf) per day, per customer. Similarly, winter data after removal of the daily baseload level provides the temperature sensitive load requirements for each class of customer.

This usage primarily reflects space heating but also includes such other temperature sensitive needs as water heating attributable to colder ground water inlet temperatures and similar process variations. This overall heating requirement can be expressed in terms of the cubic feet of gas

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

utilized per degree of temperature change on a per customer basis for each separate customer classification.

In addition, consideration must be given to the variation of customer utilization patterns for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 20-year period. This pattern reflects 3,956 degree-days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced in the January to May period and warmer to colder daily temperatures in the September to December period.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit and is used as a tool to measure space heating requirements, i.e. on a day experiencing an average temperature of 40 degrees F. there would be 25 degree days. The annual 3,956 degree days which is composed of the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above described baseload, space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produce a daily calculation of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes metered at the city gate to supply customers' requirements while sales are those volumes registered on customer meters. The variation between sendout and sales, after adjustments, is that portion which is lost and unaccounted for in the PGW distribution system.

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

Sales and sendout differ on a monthly basis in the degree day distribution pattern. For efficiency, meter reading and billing efforts are distributed uniformly over the available number of working days in a month and the majority of PGW customers are divided into 20 individual groups or cycles containing residential, commercial and industrial accounts within a specific geographic area. When these cycle customers are billed each month they reflect meter reading usage not for the calendar month being billed, but for the number of days and temperature pattern of degree-days experienced during their specific interval between meter readings. For example, assume the month of January contained 900 calendar degree-days. The customers in cycle 10 being billed for the month of January might have had meter readings taken on December 15 and again on January 17. Sales billed and reported in the company records for these customers would reflect the number of days and degree days between these reading dates rather than the 900 degree days of the month. Similarly, cycle 1 customers that might have had meter readings taken on December 1 and January 2 would reflect principally the month of December temperature experience, whereas, cycle 20 customers with meter readings taken possibly December 28 and January 29 would reflect principally the month of January temperature experience.

An average of the 20 cycles (Average Cycle Degree-Days) is used as the temperature pattern upon which to project the volume of sales in the forecast period. Both projections of sales and sendouts represent the full demand for that period from both firm and interruptible customers.

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by classes of customers from sales reported for the summer months in the previous year. This average factor is then utilized in the sendout formula with the customer counts for the months of July, August and September. A comparison between what the formula calculates and the actual experienced for those three months is ascertained and the trial

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

domestic (baseload) factors are finalized to replicate the total sendout experienced. The finalized domestic factors (DOMs) are then utilized in conjunction with the actual sales and customer counts for the months of December, January and February to determine the average Mcf per degree day for each of the individual months for the remaining temperature sensitive load. The results are weighted by degree-days to give an average value which is utilized as a trial value for the heating factor.

The finalized domestic factor and the trial heating factor developed, as such, are then applied in the sendout calculations together with customer counts for the months of December, January and February (the peak winter heating period) to project an estimated sendout for each of these months. The projected sendout is then compared with the actual sendout experienced. Any variation between the projected and actual is adjusted to force the replication of the actual sendout experience thus resulting in the determination of a finalized heating factor.

To project the number of customers for each individual rate class, each rate class of customers are reviewed and accumulated individually. Current customers are ascertained from the number of billings data available from sales and revenue actually experienced immediately prior to the commencement of a model run. Declines are projected for anticipated losses to electric and other fuels, demolitions and transfers to other rates. Direct transfers from a non-heating to a heating account, as a result of a current customer's conversion to gas heat, moves the domestic load to the new category. Projected additional customers are developed by the Marketing Department where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their expertise, project annual load additions which are translated into customer counts based upon typical customer usage for that individual customer class. The approximate month of turn-on is also developed to permit reflection of the effective portion of the load addition within the fiscal period under study. Interruptible class customers as well as other large special accounts are detailed individually incorporating expected gains and losses as direct contact and experience has indicated.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

The base revenue projections for both firm and interruptible customer groups are derived as the product of the projected sales volumes and the present tariff rate for each individual customer class within each group. The GCR revenue projections are derived as the product of the GCR factor and the projected sales volumes to the firm GCR customers.

IV. Design Day and Design Hour Forecasting Methodology and Assumptions

Each year a six year estimate of Design Day and Design Hour requirements anticipated under design day and design hour operating conditions is prepared to ensure that adequate resources are under contract and to further ensure that PGW can fulfill its supply obligation for its firm customer requirements on a design day and design hour.

The projected demands for design day are developed utilizing previous winter periods data for all weekdays where the temperature average for the day is 32 degrees Fahrenheit or below. The total sendout for these days as recorded under actual conditions and is reduced to firm sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a sendout model from actual daily sendouts and degree days, and the process is repeated in a quadratic regression and a cubic regression procedure. From the predicted sendouts in the regression, which are within a reasonable percent of error to the actual sendout, factors are derived to replicate the actual sendouts. The factors derived from this are used to determine the current load requirements for a 0 degrees F day and from this data, the load for a -5 degrees F hour is calculated. PGW's Marketing Department's load projections for present and future years are then applied to these requirements to develop design day and design hour present and future load requirements. This is achieved by the addition of the projected marketing load growth on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate modeling system is a tool used by PGW management to project sales, revenues and expenses, as well as to examine key planning strategies and evaluate their effects on company operations. The system provides the ability to determine the results of alternate plans and scenarios, while at the same time allowing for responses to "what if" type situations quantifying revenue and expenses. The system combines the power of the computer with the experience of management to develop both short and long range projections based upon experienced historical data for sales and sendout volumes, raw material expenses and revenues. The corporate model system is composed of five separate parts. Each part operates independently but requires substantial external data inputs as well as data output results from one or more of the other parts in the system.

Gas Demand Model

The gas demand model is used to forecast total requirements for gas based upon current customer usage experience with adjustments for projected gains and losses. Input data includes domestic and space heating usage factors, customer counts by rate classifications, temperature patterns and results in projections of sales and sendout volumes. Detail and summary reports include sales and sendout by rate classification. This data is then used by the Gas Supply Model.

Gas Supply Model

The supply model is used to dispatch the various supply sources in accordance with contract availability limitations. It develops the necessary balance between supply and demand which reflects plant fuel and storage injection requirements as well as customer demands by identifying the availability of interruptible load balancing sales. Detail and summary reports include daily and monthly load requirements, the volumes taken from each source by pipeline contract, storage balances, LNG requirements, etc.

V. PGW Corporate Modeling System (Continued)

This model is also used to determine natural gas and other raw material costs dispatched. The model tracks the various cost components of each contract - the demand, capacity, commodity, injection and withdrawal charges - providing monthly and annual details and summary information including inventory valuations and expenses for supplemental LNG supplies. This data is then used by the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop the GCR. This model in conjunction with the gas supply model ascribes responsibility for the raw material costs to firm rate classes in accordance with PGW's tariff requirements, and compensates for the Interruptible Revenue Credit, interest, gas transportation Supplier Storage Peaking and migration charges and the previous over or under billing of fuel expenses. The GCR is then used by the Revenue Model.

Revenue Model

The revenue model is used to project billed revenue by rate classification in accordance with PGW's rate tariffs. It prepares the net billed revenue, GCR revenues, senior citizen discounts, and cycle billing information all detailed by rate classification. The detail and summary reports provided by this model are directed to the accounting and financial departments for inclusion in various financial reviews.

Summary

The corporate modeling system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes. Results assist in the development of PGW's annual Operating Budget, setting of the GCR and planning of supply resources.

V. PGW Corporate Modeling System (Continued)

The model also provides a Status Report for the evaluation of remaining winter period requirements on both normal and design temperature patterns and the extrapolation of the current year based upon the experience to date and an assumption of temperatures anticipated for the remaining period of the year, this latter acting as a guide for both financial cash flow planning and winter operations.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing, of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) as utility seeking recovery of purchased as costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

53.64(c)(6) Each Section 1307 (f) utility shall file with the Commission a statement of its current fuel procurement practices, detailed information concerning, the staffing and expertise of its fuel procurement personnel, a discussion of its methodology for obtaining a least cost and reliable source of as supply, including a discussion of any methodologies, assumptions, models or rules of thumb employed in selecting its gas supply, transportation and storage mix, its loss prevention strategy in the event of fraud, nonperformance or interruption of performance, its participation in capacity release and reallocation programs, the impact, if any, upon least cost fuel procurement by constraints imposed by local transportation end users, interruptible service, balancing, storage and dispatching, options, and its strategy for improving its fuel procurement practices in the future and timetable for implementing these changes.

Response:

I. Current Strategy

PGW's current strategy for meeting, the system's supply requirements is to use a portfolio approach in both contract structures and pricing. The Company's supply portfolio is split into four distinct categories. First, the Company enters into winter-only supply contracts. These winter-only supply arrangements provide gas supply that fills approximately thirty-seven percent (37%) of PGW's daily firm transportation entitlements on both Spectra Energy Gas Transmission (formerly Duke Energy Gas Transmission) and Williams Gas Pipeline.

Item 53.64(c)(6) continued

The Enbridge Energy and Williams pipelines represent the only interstate pipeline facilities with physical connections to the PGW service territory. These supply contracts also recognize pipeline receipt and delivery rights. By sourcing supply in this manner, PGW not only ensures security of supply from the pipelines, but also can take advantage of varying basis differentiated pricing in the market. These contracts all contain the ability to set the price for upcoming months, or to have the pricing default to an agreed upon market index. Second, an additional twenty-seven percent (27 %) is priced at the “gas daily mid-point” for each day of usage. These contracts allow for daily changes in volume. The operational flexibility of these contracts allows the company to increase or decrease gas supply to meet variations in send out requirements. Third, the company utilizes one (1) pipeline storage services, as an additional source of supply. This storage service does not contain bundled transportation and therefore are moved to the city gates within PGW's firm interstate pipeline capacity. This service represent eight percent (8 %) of supply at a fixed price. Additionally the company purchases eighteen percent (18%) of its supply using day purchases as needed. The Company will again attempt to release capacity for year periods totaling 33,000 dekatherms as it did last year if this proves less economic for the ratepayer, the Company will release these capacities for the winter and summer season separately. These capacity releases are with twenty-four hour recall rights in their terms and conditions. They are split between the two interstate pipelines, which service PGW. If the need would arise to recall this capacity PGW would do so and use its unbundled storage to fill the TGPL portion 10,000 dekatherms and depend on market based prices to fill the TETCO portion 23,000 dekatherms. The Company also releases firm capacity to its firm choice suppliers on a monthly basis based upon there firm pool size.

Additionally, PGW utilizes bundled storage and LNG to meet operational requirements and to accomplish other cost saving initiatives. Specifically, once design winter sendout requirements are ensured of being met, the company may utilize bundled storage and LNG inventories to displace higher priced supply based on the current market conditions. PGW uses a portfolio approach to address system supply and storage refill in the traditional non-peak season. The Gas Supply area uses the GCR filing as a template in an attempt to purchase gas volumes for both system supply and storage refill below the projected cost, when possible. However, some proportion of the supply will always be subject to spot market pricing, either daily or monthly due, to the constant need to purchase gas to meet sendout variations that are inherent in a residential firm heating load. PGW seeks to recoup demand charges for its firm transportation through the FERC approved capacity release mechanisms.

The Company also enters into the incremental off systems sales market to generate additional revenue when it is economically advantageous to do so. At

Item 53.64(c) (6) continued

all times the Company is studying the market for any economic advantage that can be derived in support of the firm ratepayer.

II. Overview of Gas Supply Section

The Gas Supply Section of Gas Management is comprised of four departments: Gas Supply, Gas Transportation, Gas Accounting and Gas Control. The Gas Supply Section is responsible for ensuring that there is an adequate supply of natural gas available at all times to meet the requirements of PGW's over 490,000 firm customers. The Gas Supply Section accomplishes this through continuous interaction with various departments within PGW.

The staff of the Gas Supply Section is expected to maintain an in-depth working knowledge of all facets of the natural gas supply markets. The staff members of the four departments are required to maintain a working knowledge of PGW's natural gas contracts and facilities for the purpose of ensuring the safe and efficient operation of the distribution system, in accordance with company procedures, and in compliance with federal, state, and local regulations.

III. Organization and Staffing

Director of Gas Transportation and Gas Control: This person has a three year history working in the Gas Supply area and a five-year history in Gas Processing for PGW. This individual also has a background working in the Oil and Petrochemical industries. This individual has a BS in Chemical Engineer and MBA as well as having a background in natural gas accounting, allocation and confirmation experience, and its effect on supply portfolio management.

This individual and the staffs of the departments that report to him interact continuously and provide 24/7 coverage in all situations pertaining to the gas supply portfolio and operation of the natural gas facilities. This is done in conjunction with the Gas Supply Committee, as well as everyday meetings with the Senior VP of Gas Management and the other direct reports of the Senior VP of Gas Management. The following departments report directly to this individual: Gas Supply, Gas Control, Gas Accounting, and Gas Transportation.

Item 53.64(c)(6) continued

Administrator, Gas Supply: this person has sixteen years of experience in the gas supply area. This individual has a MBA in International Business and BBA with a concentration in Management Information Systems, in addition to having an extensive background in the area of gas purchasing. Reporting to this individual are the gas accountants, gas coordinators and gas buyers.

Manager, Gas Control: This person has over seven years in the oil & gas area, is responsible for the day-to-day management of the city distribution grid and daily confirmation of each day's gas volumes. He manages the gas control department on a 24/7 basis. The manager has completed the course work for a BS degree and has extensive experience in the Distribution Department's Pressure Control and Network Analysis area.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

- (7) A list of off-system sales, including transportation, storage, or capacity releases by the utility at less than the weighted average price of gas, or at less than the original contract cost of transportation, storage, or capacity supplied to the utility for its own customers.

Response:

The attached schedules list off-system sales, capacity release, and asset management for the period of January 1, 2019 to December 31, 2019.

Schedule 1 – reflects all off-system sales margins for the period January 1, 2019 to December 31, 2019.

Schedule 2 – would reflect any off-system sales transactions that were done at less than the weighted average price of gas. The schedule is blank because none of the deals match the criteria.

Schedule 3 – illustrates all capacity release deals.

Schedule 4 - reflects individual capacity release transactions that were done at less than the weighted average cost of capacity.

Schedule 1
Item 53.64(C)(7)

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2019

| Off-System Sales | | | |
|-------------------------|----------------------|-------------------------|---------------------|
| MONTH | Total Revenue | Ratepayer Margin | Total Credit |
| Jan-19 | \$0 | \$0 | \$0 |
| Feb-19 | \$0 | \$0 | \$0 |
| Mar-19 | \$0 | \$0 | \$0 |
| Apr-19 | \$0 | \$0 | \$0 |
| May-19 | \$0 | \$0 | \$0 |
| Jun-19 | \$0 | \$0 | \$0 |
| Jul-19 | \$0 | \$0 | \$0 |
| Aug-19 | \$0 | \$0 | \$0 |
| Sep-19 | \$0 | \$0 | \$0 |
| Oct-19 | \$0 | \$0 | \$0 |
| Nov-19 | \$0 | \$0 | \$0 |
| Dec-19 | \$0 | \$0 | \$0 |

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Schedule II
Item 53.64 (c) (7)

Off System Sale Profits Per WACOG Worksheet

PGW had no off system sales, which were not less than the weighted average cost of gas.

Philadelphia Gas Works
 Pennsylvania Public Utilities Commission
 52 Pa. Code §53.61, et seq.
 For the Twelve Months Ending December 31, 2019

Schedule 3
 Item 53.64(C)(7)

| MONTH | Capacity Release | | |
|--------------|---------------------|---------------------|----------------------|
| | Total | Total | |
| | TGPL | TETCO | Total |
| | Credits | Credits | Credits |
| Jan-19 | \$ 701,362 | \$ 1,332,317 | \$ 2,033,679 |
| Feb-19 | \$ 638,836 | \$ 1,210,355 | \$ 1,849,191 |
| Mar-19 | \$ 706,045 | \$ 1,338,908 | \$ 2,044,953 |
| Apr-19 | \$ 320,936 | \$ 283,356 | \$ 604,292 |
| May-19 | \$ 355,796 | \$ 538,238 | \$ 894,034 |
| Jun-19 | \$ 343,160 | \$ 578,322 | \$ 921,483 |
| Jul-19 | \$ 355,304 | \$ 557,582 | \$ 912,886 |
| Aug-19 | \$ 363,385 | \$ 561,888 | \$ 925,273 |
| Sep-19 | \$ 351,795 | \$ 642,188 | \$ 993,982 |
| Oct-19 | \$ 346,529 | \$ 383,742 | \$ 730,270 |
| Nov-19 | \$ 809,897 | \$ 1,101,560 | \$ 1,911,457 |
| Dec-19 | \$ 842,422 | \$ 1,145,065 | \$ 1,987,487 |
| TOTAL | \$ 6,135,465 | \$ 9,673,521 | \$ 15,808,986 |

| M / YR | PIPELINE | PATH | RECALL STATUS | MONTHLY VOLUME DTH | TOTAL MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|------------|----------|-----------|---------------|--------------------|----------------------|------------|-------------------|-----------------------|
| January-19 | TETCO | ELA - M-3 | N | 9,703 | \$ 4,158.71 | \$ 0.4286 | \$ 4,158.71 | Energy Plus |
| | TETCO | ELA - M-3 | N | 23,498 | \$ 10,071.23 | \$ 0.4286 | \$ 10,071.23 | Vista Energy |
| | TETCO | ELA - M-3 | N | 124 | \$ 53.14 | \$ 0.4285 | \$ 53.14 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 74,338 | \$ 31,861.27 | \$ 0.4286 | \$ 31,861.27 | Direct Energy |
| | TETCO | ELA - M-3 | N | 4,247 | \$ 1,820.26 | \$ 0.4286 | \$ 1,820.26 | Josco Energy |
| | TETCO | ELA - M-3 | N | 10,695 | \$ 4,583.89 | \$ 0.4286 | \$ 4,583.89 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 3,906 | \$ 1,674.12 | \$ 0.4286 | \$ 1,674.12 | WGL Energy |
| | TETCO | ELA - M-3 | N | 21,142 | \$ 9,061.46 | \$ 0.4286 | \$ 9,061.46 | SFE Energy |
| | TETCO | ELA - M-3 | N | 137,423 | \$ 58,899.49 | \$ 0.4286 | \$ 58,899.49 | CNE |
| | TETCO | ELA - M-3 | N | 8,649 | \$ 3,706.97 | \$ 0.4286 | \$ 3,706.97 | BlueRock Energy |
| | TETCO | ELA - M-3 | N | 134,788 | \$ 57,770.15 | \$ 0.4286 | \$ 57,770.15 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 1,705 | \$ 730.76 | \$ 0.4286 | \$ 730.76 | MPower Energy |
| | TETCO | ELA - M-3 | N | 16,337 | \$ 7,002.04 | \$ 0.4286 | \$ 7,002.04 | Sprague |
| | TETCO | ELA - M-3 | N | 1,984 | \$ 850.34 | \$ 0.4286 | \$ 850.34 | Shipley |
| | TETCO | ELA - M-3 | N | 7,657 | \$ 3,281.80 | \$ 0.4286 | \$ 3,281.80 | CIMA |
| | TETCO | ELA - M-3 | N | 16,120 | \$ 6,909.03 | \$ 0.4286 | \$ 6,909.03 | Palmco |
| | TETCO | ELA - M-3 | N | 62 | \$ 26.57 | \$ 0.4285 | \$ 26.57 | Park Power |
| | TETCO | STX - M3 | N | 251,534 | \$ 350,739.01 | \$ 1.3944 | \$ 350,739.01 | Castleton Commodities |
| | TETCO | STX - M3 | N | 486,948 | \$ 779,116.80 | \$ 1.6000 | \$ 779,116.80 | Castleton Commodities |
| | | | | | <u>1,210,860</u> | | \$ | <u>1,332,317.04</u> |
| | TRANSCO | 3-6 | N | 124 | \$ 56.73 | \$ 0.4575 | \$ 56.73 | Volunteer Energy |
| | TRANSCO | 3-6 | N | 1,705 | \$ 782.75 | \$ 0.4591 | \$ 782.75 | MPower Energy |
| | TRANSCO | 3-6 | N | 1,984 | \$ 911.09 | \$ 0.4592 | \$ 911.09 | Shipley |
| | TRANSCO | 3-6 | N | 7,657 | \$ 3,515.40 | \$ 0.4591 | \$ 3,515.40 | CIMA |
| | TRANSCO | 3-6 | N | 3,937 | \$ 1,807.61 | \$ 0.4591 | \$ 1,807.61 | WGL Energy |
| | TRANSCO | 3-6 | N | 4,278 | \$ 1,964.16 | \$ 0.4591 | \$ 1,964.16 | Josco Energy |
| | TRANSCO | 3-6 | N | 8,649 | \$ 3,971.10 | \$ 0.4591 | \$ 3,971.10 | BlueRock Energy |
| | TRANSCO | 3-6 | N | 10,726 | \$ 4,924.97 | \$ 0.4592 | \$ 4,924.97 | Atlantic Energy |
| | TRANSCO | 3-6 | N | 16,120 | \$ 7,401.56 | \$ 0.4592 | \$ 7,401.56 | Palmco |
| | TRANSCO | 3-6 | N | 21,173 | \$ 9,721.29 | \$ 0.4591 | \$ 9,721.29 | SFE Energy |
| | TRANSCO | 3-6 | N | 9,734 | \$ 4,469.27 | \$ 0.4591 | \$ 4,469.27 | Energy Plus |
| | TRANSCO | 3-6 | N | 16,337 | \$ 7,501.07 | \$ 0.4591 | \$ 7,501.07 | Sprague |
| | TRANSCO | 3-6 | N | 23,529 | \$ 10,802.88 | \$ 0.4591 | \$ 10,802.88 | Vista Energy |
| | TRANSCO | 3-6 | N | 74,338 | \$ 34,131.31 | \$ 0.4591 | \$ 34,131.31 | Direct Energy |
| | TRANSCO | 3-6 | N | 134,788 | \$ 61,886.54 | \$ 0.4591 | \$ 61,886.54 | UGI Energy Services |
| | TRANSCO | 3-6 | N | 137,454 | \$ 63,110.42 | \$ 0.4591 | \$ 63,110.42 | CNE |
| | TRANSCO | 3-6 | N | 62 | \$ 28.52 | \$ 0.4600 | \$ 28.52 | Park Power |
| | TRANSCO | 1-3 | N | 155,000 | \$ 1,550.00 | \$ 0.0100 | \$ 1,550.00 | United Energy |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,325.00 | \$ 0.0150 | \$ 2,325.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 480,500.00 | \$ 1.5500 | \$ 480,500.00 | Castleton Commodities |
| | | | | <u>1,092,595</u> | | \$ | <u>701,361.67</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | |
|-------------|----------|-----------|----------------|------------------|----------------|----------------------|------------------------|-----------------------|
| February-19 | TETCO | ELA - M-3 | N | 11,116 | \$ 4,815.46 | \$ 0.4332 | \$ 4,815.46 | Energy Plus |
| | TETCO | ELA - M-3 | N | 24,836 | \$ 10,758.95 | \$ 0.4332 | \$ 10,758.95 | Vista Energy |
| | TETCO | ELA - M-3 | N | 112 | \$ 48.52 | \$ 0.4332 | \$ 48.52 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 64,988 | \$ 28,152.80 | \$ 0.4332 | \$ 28,152.80 | Direct Energy |
| | TETCO | ELA - M-3 | N | 5,348 | \$ 2,316.76 | \$ 0.4332 | \$ 2,316.76 | Josco Energy |
| | TETCO | ELA - M-3 | N | 11,284 | \$ 4,888.22 | \$ 0.4332 | \$ 4,888.22 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 3,528 | \$ 1,528.33 | \$ 0.4332 | \$ 1,528.33 | WGL Energy |
| | TETCO | ELA - M-3 | N | 25,116 | \$ 10,880.26 | \$ 0.4332 | \$ 10,880.26 | SFE Energy |
| | TETCO | ELA - M-3 | N | 120,960 | \$ 52,399.87 | \$ 0.4332 | \$ 52,399.87 | CNE |
| | TETCO | ELA - M-3 | N | 588 | \$ 254.72 | \$ 0.4332 | \$ 254.72 | BBPC, LLC |
| | TETCO | ELA - M-3 | N | 7,784 | \$ 3,372.02 | \$ 0.4332 | \$ 3,372.02 | BlueRock Energy |
| | TETCO | ELA - M-3 | N | 122,136 | \$ 52,909.31 | \$ 0.4332 | \$ 52,909.31 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 1,624 | \$ 703.51 | \$ 0.4332 | \$ 703.51 | MPower Energy |
| | TETCO | ELA - M-3 | N | 14,616 | \$ 6,331.66 | \$ 0.4332 | \$ 6,331.66 | Sprague |
| | TETCO | ELA - M-3 | N | 1,792 | \$ 776.30 | \$ 0.4332 | \$ 776.30 | Shipley |
| | TETCO | ELA - M-3 | N | 6,748 | \$ 2,923.24 | \$ 0.4332 | \$ 2,923.24 | CIMA |
| | TETCO | ELA - M-3 | N | 15,652 | \$ 6,780.44 | \$ 0.4332 | \$ 6,780.44 | Palmco |
| | TETCO | STX - M3 | N | 227,192 | \$ 316,796.52 | \$ 1.3944 | \$ 316,796.52 | Castleton Commodities |
| | TETCO | STX - M3 | N | 439,824 | \$ 703,718.40 | \$ 1.6000 | \$ 703,718.40 | Castleton Commodities |
| | | | | <u>1,105,244</u> | | | <u>\$ 1,210,355.29</u> | |
| | TRANSCO | 3-6 | N | 112 | \$ 51.24 | \$ 0.4575 | \$ 51.24 | Volunteer Energy |
| | TRANSCO | 3-6 | N | 588 | \$ 269.92 | \$ 0.4590 | \$ 269.92 | Great Eastern |
| | TRANSCO | 3-6 | N | 1,624 | \$ 745.64 | \$ 0.4591 | \$ 745.64 | MPower Energy |
| | TRANSCO | 3-6 | N | 1,792 | \$ 822.92 | \$ 0.4592 | \$ 822.92 | Shipley |
| | TRANSCO | 3-6 | N | 6,776 | \$ 3,111.08 | \$ 0.4591 | \$ 3,111.08 | CIMA |
| | TRANSCO | 3-6 | N | 3,556 | \$ 1,632.68 | \$ 0.4591 | \$ 1,632.68 | WGL Energy |
| | TRANSCO | 3-6 | N | 5,348 | \$ 2,455.32 | \$ 0.4591 | \$ 2,455.32 | Josco Energy |
| | TRANSCO | 3-6 | N | 7,812 | \$ 3,586.80 | \$ 0.4591 | \$ 3,586.80 | BlueRock Energy |
| | TRANSCO | 3-6 | N | 11,312 | \$ 5,193.72 | \$ 0.4591 | \$ 5,193.72 | Atlantic Energy |
| | TRANSCO | 3-6 | N | 15,680 | \$ 7,199.36 | \$ 0.4591 | \$ 7,199.36 | Palmco |
| | TRANSCO | 3-6 | N | 25,116 | \$ 11,531.80 | \$ 0.4591 | \$ 11,531.80 | SFE Energy |
| | TRANSCO | 3-6 | N | 11,144 | \$ 5,116.44 | \$ 0.4591 | \$ 5,116.44 | Energy Plus |
| | TRANSCO | 3-6 | N | 14,644 | \$ 6,723.92 | \$ 0.4592 | \$ 6,723.92 | Sprague |
| | TRANSCO | 3-6 | N | 24,836 | \$ 11,403.28 | \$ 0.4591 | \$ 11,403.28 | Vista Energy |
| | TRANSCO | 3-6 | N | 65,016 | \$ 29,851.36 | \$ 0.4591 | \$ 29,851.36 | Direct Energy |
| | TRANSCO | 3-6 | N | 122,136 | \$ 56,077.28 | \$ 0.4591 | \$ 56,077.28 | UGI Energy Services |
| | TRANSCO | 3-6 | N | 120,988 | \$ 55,550.32 | \$ 0.4591 | \$ 55,550.32 | CNE |
| | TRANSCO | 3-6 | N | 28 | \$ 12.88 | \$ 0.4600 | \$ 12.88 | Park Power |
| | TRANSCO | 1-3 | N | 140,000 | \$ 1,400.00 | \$ 0.0100 | \$ 1,400.00 | United Energy |
| | TRANSCO | 1-3 | N | 140,000 | \$ 2,100.00 | \$ 0.0150 | \$ 2,100.00 | United Energy |
| | TRANSCO | 3-6 | N | 280,000 | \$ 434,000.00 | \$ 1.5500 | \$ 434,000.00 | Castleton Commodities |
| | | | <u>998,508</u> | | | <u>\$ 638,835.96</u> | | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | |
|----------|----------|-----------|---------------|------------------|----------------|------------|------------------------|-----------------------|
| March-19 | TETCO | ELA - M-3 | N | 12,772 | \$ 5,532.83 | \$ 0.4332 | \$ 5,532.83 | Energy Plus |
| | TETCO | ELA - M-3 | N | 27,869 | \$ 12,072.85 | \$ 0.4332 | \$ 12,072.85 | Vista Energy |
| | TETCO | ELA - M-3 | N | 124 | \$ 53.71 | \$ 0.4331 | \$ 53.71 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 72,757 | \$ 31,518.33 | \$ 0.4332 | \$ 31,518.33 | Direct Energy |
| | TETCO | ELA - M-3 | N | 5,673 | \$ 2,457.55 | \$ 0.4332 | \$ 2,457.55 | Josco Energy |
| | TETCO | ELA - M-3 | N | 11,749 | \$ 5,089.67 | \$ 0.4332 | \$ 5,089.67 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,084 | \$ 2,202.38 | \$ 0.4332 | \$ 2,202.38 | WGL Energy |
| | TETCO | ELA - M-3 | N | 31,434 | \$ 13,617.22 | \$ 0.4332 | \$ 13,617.22 | SFE Energy |
| | TETCO | ELA - M-3 | N | 134,633 | \$ 58,323.02 | \$ 0.4332 | \$ 58,323.02 | CNE |
| | TETCO | ELA - M-3 | N | 775 | \$ 335.73 | \$ 0.4332 | \$ 335.73 | BBPC, LLC |
| | TETCO | ELA - M-3 | N | 135,191 | \$ 58,564.73 | \$ 0.4332 | \$ 58,564.73 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 1,860 | \$ 805.75 | \$ 0.4332 | \$ 805.75 | MPower Energy |
| | TETCO | ELA - M-3 | N | 15,996 | \$ 6,929.47 | \$ 0.4332 | \$ 6,929.47 | Sprague |
| | TETCO | ELA - M-3 | N | 1,922 | \$ 832.60 | \$ 0.4332 | \$ 832.60 | Shipley |
| | TETCO | ELA - M-3 | N | 7,626 | \$ 3,303.59 | \$ 0.4332 | \$ 3,303.59 | CIMA |
| | TETCO | ELA - M-3 | N | 17,112 | \$ 7,412.92 | \$ 0.4332 | \$ 7,412.92 | Palmco |
| | TETCO | STX - M3 | N | 251,534 | \$ 350,739.01 | \$ 1.3944 | \$ 350,739.01 | Castleton Commodities |
| | TETCO | STX - M3 | N | 486,948 | \$ 779,116.80 | \$ 1.6000 | \$ 779,116.80 | Castleton Commodities |
| | | | | <u>1,221,059</u> | | | <u>\$ 1,338,908.16</u> | |
| | TRANSCO | 3-6 | N | 124 | \$ 56.73 | \$ 0.4575 | \$ 56.73 | Volunteer Energy |
| | TRANSCO | 3-6 | N | 806 | \$ 370.14 | \$ 0.4592 | \$ 370.14 | Great Eastern |
| | TRANSCO | 3-6 | N | 1,860 | \$ 854.05 | \$ 0.4592 | \$ 854.05 | MPower Energy |
| | TRANSCO | 3-6 | N | 1,922 | \$ 882.57 | \$ 0.4592 | \$ 882.57 | Shipley |
| | TRANSCO | 3-6 | N | 7,657 | \$ 3,515.40 | \$ 0.4591 | \$ 3,515.40 | CIMA |
| | TRANSCO | 3-6 | N | 5,115 | \$ 2,348.25 | \$ 0.4591 | \$ 2,348.25 | WGL Energy |
| | TRANSCO | 3-6 | N | 5,673 | \$ 2,604.62 | \$ 0.4591 | \$ 2,604.62 | Josco Energy |
| | TRANSCO | 3-6 | N | 11,749 | \$ 5,394.62 | \$ 0.4592 | \$ 5,394.62 | Atlantic Energy |
| | TRANSCO | 3-6 | N | 17,112 | \$ 7,856.64 | \$ 0.4591 | \$ 7,856.64 | Palmco |
| | TRANSCO | 3-6 | N | 31,434 | \$ 14,432.67 | \$ 0.4591 | \$ 14,432.67 | SFE Energy |
| | TRANSCO | 3-6 | N | 12,803 | \$ 5,878.53 | \$ 0.4592 | \$ 5,878.53 | Energy Plus |
| | TRANSCO | 3-6 | N | 16,027 | \$ 7,358.78 | \$ 0.4591 | \$ 7,358.78 | Sprague |
| | TRANSCO | 3-6 | N | 27,869 | \$ 12,795.56 | \$ 0.4591 | \$ 12,795.56 | Vista Energy |
| | TRANSCO | 3-6 | N | 72,757 | \$ 33,405.60 | \$ 0.4591 | \$ 33,405.60 | Direct Energy |
| | TRANSCO | 3-6 | N | 135,191 | \$ 62,071.61 | \$ 0.4591 | \$ 62,071.61 | UGI Energy Services |
| | TRANSCO | 3-6 | N | 134,633 | \$ 61,815.55 | \$ 0.4591 | \$ 61,815.55 | CNE |
| | TRANSCO | 3-6 | N | 31 | \$ 14.26 | \$ 0.4600 | \$ 14.26 | Median Energy Corp. |
| | TRANSCO | 3-6 | N | 31 | \$ 14.26 | \$ 0.4600 | \$ 14.26 | Park Power |
| | TRANSCO | 1-3 | N | 155,000 | \$ 1,550.00 | \$ 0.0100 | \$ 1,550.00 | United Energy |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,325.00 | \$ 0.0150 | \$ 2,325.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 480,500.00 | \$ 1.5500 | \$ 480,500.00 | Castleton Commodities |
| | | | | <u>1,102,794</u> | | | <u>\$ 706,044.84</u> | |

Philadelphia Gas Works
 Pennsylvania Public Utilities Commission
 52 Pa. Code §53.61, et seq.
 For the Twelve Months Ending December 31, 2019

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | |
|----------|----------|-----------|---------------|------------------|----------------|--------------|----------------------|------------------------|
| April-19 | TETCO | ELA - M-3 | N | 13,440 | \$ 5,822.21 | \$ 0.4332 | \$ 5,822.21 | Energy Plus |
| | TETCO | ELA - M-3 | N | 28,980 | \$ 12,554.14 | \$ 0.4332 | \$ 12,554.14 | Vista Energy |
| | TETCO | ELA - M-3 | N | 120 | \$ 51.98 | \$ 0.4332 | \$ 51.98 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 65,820 | \$ 28,513.22 | \$ 0.4332 | \$ 28,513.22 | Direct Energy |
| | TETCO | ELA - M-3 | N | 5,970 | \$ 2,586.21 | \$ 0.4332 | \$ 2,586.21 | Josco Energy |
| | TETCO | ELA - M-3 | N | 10,890 | \$ 4,717.55 | \$ 0.4332 | \$ 4,717.55 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,460 | \$ 2,365.27 | \$ 0.4332 | \$ 2,365.27 | WGL Energy |
| | TETCO | ELA - M-3 | N | 35,520 | \$ 15,387.26 | \$ 0.4332 | \$ 15,387.26 | SFE Energy |
| | TETCO | ELA - M-3 | N | 128,130 | \$ 55,505.91 | \$ 0.4332 | \$ 55,505.91 | CNE |
| | TETCO | ELA - M-3 | N | 137,880 | \$ 59,729.62 | \$ 0.4332 | \$ 59,729.62 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 2,100 | \$ 909.72 | \$ 0.4332 | \$ 909.72 | Mpower Energy |
| | TETCO | ELA - M-3 | N | 15,780 | \$ 6,835.90 | \$ 0.4332 | \$ 6,835.90 | Sprague |
| | TETCO | ELA - M-3 | N | 60 | \$ 25.99 | \$ 0.4332 | \$ 25.99 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 1,920 | \$ 831.74 | \$ 0.4332 | \$ 831.74 | Shipley |
| | TETCO | ELA - M-3 | N | 14,070 | \$ 6,095.13 | \$ 0.4332 | \$ 6,095.13 | CIMA |
| | TETCO | ELA - M-3 | N | 16,560 | \$ 7,173.79 | \$ 0.4332 | \$ 7,173.79 | Palmco |
| | TETCO | ELA - M-3 | N | 870 | \$ 376.89 | \$ 0.4332 | \$ 376.89 | V3 Commodities |
| | TETCO | STX - M3 | N | 471,240 | \$ 25,446.96 | \$ 0.0540 | \$ 25,446.96 | Colonial Energy |
| | TETCO | STX - M3 | N | 243,420 | \$ 9,006.54 | \$ 0.0370 | \$ 9,006.54 | Sequent |
| | TETCO | WLA - M3 | N | 540,000 | \$ 22,140.00 | \$ 0.0410 | \$ 22,140.00 | Colonial Energy |
| TETCO | WLA - M3 | N | 540,000 | \$ 17,280.00 | \$ 0.0320 | \$ 17,280.00 | Sequent | |
| | | | | <u>2,278,230</u> | | | <u>\$ 283,356.03</u> | |
| | TRANSCO | 3-6 | N | 120 | \$ 75.90 | \$ 0.6325 | \$ 75.90 | Volunteer Energy |
| | TRANSCO | 3-6 | N | 870 | \$ 550.80 | \$ 0.6331 | \$ 550.80 | Commodities Group, LLC |
| | TRANSCO | 3-6 | N | 2,130 | \$ 1,348.20 | \$ 0.6330 | \$ 1,348.20 | Mpower Energy |
| | TRANSCO | 3-6 | N | 1,950 | \$ 1,234.20 | \$ 0.6329 | \$ 1,234.20 | Shipley |
| | TRANSCO | 3-6 | N | 14,070 | \$ 8,905.50 | \$ 0.6329 | \$ 8,905.50 | CIMA |
| | TRANSCO | 3-6 | N | 5,460 | \$ 3,456.00 | \$ 0.6330 | \$ 3,456.00 | WGL Energy |
| | TRANSCO | 3-6 | N | 6,000 | \$ 3,797.70 | \$ 0.6330 | \$ 3,797.70 | Josco Energy |
| | TRANSCO | 3-6 | N | 10,890 | \$ 6,892.80 | \$ 0.6329 | \$ 6,892.80 | Atlantic Energy |
| | TRANSCO | 3-6 | N | 16,590 | \$ 10,500.60 | \$ 0.6329 | \$ 10,500.60 | Palmco |
| | TRANSCO | 3-6 | N | 35,550 | \$ 22,500.90 | \$ 0.6329 | \$ 22,500.90 | SFE Energy |
| | TRANSCO | 3-6 | N | 13,470 | \$ 8,525.70 | \$ 0.6329 | \$ 8,525.70 | Energy Plus |
| | TRANSCO | 3-6 | N | 15,810 | \$ 10,006.80 | \$ 0.6329 | \$ 10,006.80 | Sprague |
| | TRANSCO | 3-6 | N | 29,010 | \$ 18,361.80 | \$ 0.6329 | \$ 18,361.80 | Vista Energy |
| | TRANSCO | 3-6 | N | 65,820 | \$ 41,660.10 | \$ 0.6329 | \$ 41,660.10 | Direct Energy |
| | TRANSCO | 3-6 | N | 137,880 | \$ 87,269.70 | \$ 0.6329 | \$ 87,269.70 | UGI Energy Services |
| | TRANSCO | 3-6 | N | 128,160 | \$ 81,117.60 | \$ 0.6329 | \$ 81,117.60 | CNE |
| | TRANSCO | 3-6 | N | 90 | \$ 57.00 | \$ 0.6333 | \$ 57.00 | Median Energy Corp. |
| | TRANSCO | 3-6 | N | 30 | \$ 19.20 | \$ 0.6400 | \$ 19.20 | Park Power |
| | TRANSCO | 1-3 | N | 150,000 | \$ 2,265.00 | \$ 0.0151 | \$ 2,265.00 | United Energy |
| | TRANSCO | 2-3 | N | 150,000 | \$ 390.00 | \$ 0.0026 | \$ 390.00 | United Energy |
| | TRANSCO | 3-6 | N | 300,000 | \$ 12,000.00 | \$ 0.0400 | \$ 12,000.00 | Shell |
| | | | | <u>1,083,900</u> | | | <u>\$ 320,935.50</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|--------|----------|-----------|------------------|---------------|----------------|----------------------|--------------|----------------------|
| May-19 | TETCO | ELA - M-3 | N | 14,167 | \$ 6,137.14 | \$ 0.4332 | \$ 6,137.14 | Energy Plus |
| | TETCO | ELA - M-3 | N | 131,595 | \$ 57,006.95 | \$ 0.4332 | \$ 57,006.95 | CNE |
| | TETCO | ELA - M-3 | N | 124 | \$ 53.71 | \$ 0.4331 | \$ 53.71 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 30,318 | \$ 13,133.75 | \$ 0.4332 | \$ 13,133.75 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,573 | \$ 1,114.63 | \$ 0.4332 | \$ 1,114.63 | Shipley |
| | TETCO | ELA - M-3 | N | 806 | \$ 349.16 | \$ 0.4332 | \$ 349.16 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 16,430 | \$ 7,117.47 | \$ 0.4332 | \$ 7,117.47 | Sprague |
| | TETCO | ELA - M-3 | N | 38,130 | \$ 16,517.91 | \$ 0.4332 | \$ 16,517.91 | SFE Energy |
| | TETCO | ELA - M-3 | N | 10,881 | \$ 4,713.65 | \$ 0.4332 | \$ 4,713.65 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 6,324 | \$ 2,739.55 | \$ 0.4332 | \$ 2,739.55 | Josco Energy |
| | TETCO | ELA - M-3 | N | 93 | \$ 40.28 | \$ 0.4331 | \$ 40.28 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 142,910 | \$ 61,908.61 | \$ 0.4332 | \$ 61,908.61 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 5,952 | \$ 2,578.40 | \$ 0.4332 | \$ 2,578.40 | WGL Energy |
| | TETCO | ELA - M-3 | N | 65,162 | \$ 28,228.17 | \$ 0.4332 | \$ 28,228.17 | Direct Energy |
| | TETCO | ELA - M-3 | N | 16,833 | \$ 7,292.06 | \$ 0.4332 | \$ 7,292.06 | Palmco |
| | TETCO | ELA - M-3 | N | 13,609 | \$ 5,895.43 | \$ 0.4332 | \$ 5,895.43 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 14,012 | \$ 6,070.00 | \$ 0.4332 | \$ 6,070.00 | CIMA |
| | TETCO | ELA - M-3 | N | 2,201 | \$ 953.47 | \$ 0.4332 | \$ 953.47 | Mpower Energy |
| | TETCO | STX - M3 | N | 486,948 | \$ 26,295.19 | \$ 0.0540 | \$ 26,295.19 | Colonial Energy |
| | TETCO | STX - M3 | N | 251,534 | \$ 9,306.76 | \$ 0.0370 | \$ 9,306.76 | Sequent |
| TETCO | WLA - M3 | N | 558,000 | \$ 140,392.78 | \$ 0.2516 | \$ 140,392.78 | Grays Ferry | |
| TETCO | WLA - M3 | N | 558,000 | \$ 140,392.78 | \$ 0.2516 | \$ 140,392.78 | Grays Ferry | |
| | | | <u>2,366,602</u> | | | <u>\$ 538,237.85</u> | | |
| | TRANSCO | 3-6 | N | 31 | \$ 19.84 | \$ 0.6400 | \$ 19.84 | Park Power, LLC |
| | TRANSCO | 3-6 | N | 124 | \$ 78.43 | \$ 0.6325 | \$ 78.43 | Median Energy |
| | TRANSCO | 3-6 | N | 155 | \$ 98.27 | \$ 0.6340 | \$ 98.27 | Volunteer |
| | TRANSCO | 3-6 | N | 837 | \$ 529.79 | \$ 0.6330 | \$ 529.79 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,232 | \$ 1,412.67 | \$ 0.6329 | \$ 1,412.67 | Mpower |
| | TRANSCO | 3-6 | N | 2,573 | \$ 1,628.74 | \$ 0.6330 | \$ 1,628.74 | Shipley |
| | TRANSCO | 3-6 | N | 5,983 | \$ 3,786.96 | \$ 0.6330 | \$ 3,786.96 | WGL |
| | TRANSCO | 3-6 | N | 6,324 | \$ 4,002.72 | \$ 0.6329 | \$ 4,002.72 | Josco |
| | TRANSCO | 3-6 | N | 10,912 | \$ 6,906.49 | \$ 0.6329 | \$ 6,906.49 | Atlantic |
| | TRANSCO | 3-6 | N | 13,609 | \$ 8,613.66 | \$ 0.6329 | \$ 8,613.66 | CIMA |
| | TRANSCO | 3-6 | N | 14,012 | \$ 8,868.79 | \$ 0.6329 | \$ 8,868.79 | CIMA |
| | TRANSCO | 3-6 | N | 14,167 | \$ 8,967.06 | \$ 0.6330 | \$ 8,967.06 | Energy Plus |
| | TRANSCO | 3-6 | N | 16,461 | \$ 10,418.79 | \$ 0.6329 | \$ 10,418.79 | Sprague |
| | TRANSCO | 3-6 | N | 16,864 | \$ 10,673.92 | \$ 0.6329 | \$ 10,673.92 | Palmco |
| | TRANSCO | 3-6 | N | 30,318 | \$ 19,189.31 | \$ 0.6329 | \$ 19,189.31 | Vista |
| | TRANSCO | 3-6 | N | 38,130 | \$ 24,134.12 | \$ 0.6329 | \$ 24,134.12 | SFE |
| | TRANSCO | 3-6 | N | 65,193 | \$ 41,263.17 | \$ 0.6329 | \$ 41,263.17 | Direct Energy |
| | TRANSCO | 3-6 | N | 131,626 | \$ 83,311.26 | \$ 0.6329 | \$ 83,311.26 | CNE |
| | TRANSCO | 3-6 | N | 142,941 | \$ 90,473.19 | \$ 0.6329 | \$ 90,473.19 | UGI |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,340.50 | \$ 0.0151 | \$ 2,340.50 | United Energy |
| | TRANSCO | 2-3 | N | 155,000 | \$ 403.00 | \$ 0.0026 | \$ 403.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 12,400.00 | \$ 0.0400 | \$ 12,400.00 | Shell |
| | TRANSCO | 3-6 | N | 310,000 | \$ 16,275.00 | \$ 0.0525 | \$ 16,275.00 | Hartree Partners |
| | | | <u>1,442,492</u> | | | <u>\$ 355,795.68</u> | | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|---------|----------|-----------|---------------|------------------|---------------------|------------------|----------------------|----------------------|
| June-19 | TETCO | ELA - M-3 | N | 300 | \$ 182.43 | \$ 0.6081 | \$ 182.43 | Energy Plus |
| | TETCO | ELA - M-3 | N | 14,160 | \$ 8,610.70 | \$ 0.6081 | \$ 8,610.70 | Energy Plus |
| | TETCO | ELA - M-3 | N | 129,270 | \$ 78,609.08 | \$ 0.6081 | \$ 78,609.08 | CNE |
| | TETCO | ELA - M-3 | N | 120 | \$ 72.97 | \$ 0.6081 | \$ 72.97 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 28,680 | \$ 17,440.31 | \$ 0.6081 | \$ 17,440.31 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,580 | \$ 1,568.90 | \$ 0.6081 | \$ 1,568.90 | Shipley |
| | TETCO | ELA - M-3 | N | 810 | \$ 492.57 | \$ 0.6081 | \$ 492.57 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 16,230 | \$ 9,869.47 | \$ 0.6081 | \$ 9,869.47 | Sprague |
| | TETCO | ELA - M-3 | N | 930 | \$ 565.54 | \$ 0.6081 | \$ 565.54 | American Gas & Power |
| | TETCO | ELA - M-3 | N | 38,730 | \$ 23,551.72 | \$ 0.6081 | \$ 23,551.72 | SFE Energy |
| | TETCO | ELA - M-3 | N | 10,680 | \$ 6,494.51 | \$ 0.6081 | \$ 6,494.51 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,610 | \$ 3,411.45 | \$ 0.6081 | \$ 3,411.45 | Josco Energy |
| | TETCO | ELA - M-3 | N | 120 | \$ 72.97 | \$ 0.6081 | \$ 72.97 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 138,390 | \$ 84,154.95 | \$ 0.6081 | \$ 84,154.95 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 4,770 | \$ 2,900.63 | \$ 0.6081 | \$ 2,900.63 | WGL Energy |
| | TETCO | ELA - M-3 | N | 61,470 | \$ 37,379.90 | \$ 0.6081 | \$ 37,379.90 | Direct Energy |
| | TETCO | ELA - M-3 | N | 15,540 | \$ 9,449.87 | \$ 0.6081 | \$ 9,449.87 | Palmco |
| | TETCO | ELA - M-3 | N | 13,500 | \$ 8,209.35 | \$ 0.6081 | \$ 8,209.35 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 300 | \$ 182.43 | \$ 0.6081 | \$ 182.43 | CIMA |
| | TETCO | ELA - M-3 | N | 2,100 | \$ 1,277.01 | \$ 0.6081 | \$ 1,277.01 | Mpower Energy |
| | TETCO | STX - M3 | N | 471,240 | \$ 25,446.96 | \$ 0.0540 | \$ 25,446.96 | Colonial Energy |
| | TETCO | STX - M3 | N | 243,420 | \$ 9,006.54 | \$ 0.0370 | \$ 9,006.54 | Sequent |
| | TETCO | WLA - M3 | N | 540,000 | \$ 124,686.01 | \$ 0.2309 | \$ 124,686.01 | Grays Ferry |
| | TETCO | WLA - M3 | N | 540,000 | \$ 124,686.01 | \$ 0.2309 | \$ 124,686.01 | Grays Ferry |
| | | | | <u>2,278,950</u> | | | <u>\$ 578,322.28</u> | |
| | TRANSCO | 3-6 | N | 30 | \$ 19.20 | \$ 0.6400 | \$ 19.20 | Park Power, LLC |
| | TRANSCO | 3-6 | N | 120 | \$ 75.90 | \$ 0.6325 | \$ 75.90 | Median Energy |
| | TRANSCO | 3-6 | N | 150 | \$ 95.10 | \$ 0.6340 | \$ 95.10 | Volunteer |
| | TRANSCO | 3-6 | N | 840 | \$ 531.60 | \$ 0.6329 | \$ 531.60 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,130 | \$ 1,348.20 | \$ 0.6330 | \$ 1,348.20 | Mpower |
| | TRANSCO | 3-6 | N | 2,610 | \$ 1,652.10 | \$ 0.6330 | \$ 1,652.10 | Shipley |
| | TRANSCO | 3-6 | N | 4,770 | \$ 3,019.20 | \$ 0.6330 | \$ 3,019.20 | WGL |
| | TRANSCO | 3-6 | N | 5,610 | \$ 3,550.80 | \$ 0.6329 | \$ 3,550.80 | Josco |
| | TRANSCO | 3-6 | N | 10,710 | \$ 6,778.80 | \$ 0.6329 | \$ 6,778.80 | Atlantic |
| | TRANSCO | 3-6 | N | 300 | \$ 189.90 | \$ 0.6330 | \$ 189.90 | CIMA |
| | TRANSCO | 3-6 | N | 13,530 | \$ 8,563.50 | \$ 0.6329 | \$ 8,563.50 | CIMA |
| | TRANSCO | 3-6 | N | 300 | \$ 189.90 | \$ 0.6330 | \$ 189.90 | Energy Plus |
| | TRANSCO | 3-6 | N | 14,160 | \$ 8,962.50 | \$ 0.6329 | \$ 8,962.50 | Energy Plus |
| | TRANSCO | 3-6 | N | 960 | \$ 607.80 | \$ 0.6331 | \$ 607.80 | American Gas & Power |
| | TRANSCO | 3-6 | N | 16,260 | \$ 10,291.80 | \$ 0.6330 | \$ 10,291.80 | Sprague |
| | TRANSCO | 3-6 | N | 15,540 | \$ 9,836.10 | \$ 0.6330 | \$ 9,836.10 | Palmco |
| | TRANSCO | 3-6 | N | 28,710 | \$ 18,171.90 | \$ 0.6329 | \$ 18,171.90 | Vista |
| | TRANSCO | 3-6 | N | 38,760 | \$ 24,532.80 | \$ 0.6329 | \$ 24,532.80 | SFE |
| | TRANSCO | 3-6 | N | 61,500 | \$ 38,925.60 | \$ 0.6329 | \$ 38,925.60 | Direct Energy |
| | TRANSCO | 3-6 | N | 129,270 | \$ 81,820.20 | \$ 0.6329 | \$ 81,820.20 | CNE |
| | TRANSCO | 3-6 | N | 138,390 | \$ 87,592.50 | \$ 0.6329 | \$ 87,592.50 | UGI |
| | TRANSCO | 1-3 | N | 150,000 | \$ 2,265.00 | \$ 0.0151 | \$ 2,265.00 | United Energy |
| | TRANSCO | 2-3 | N | 150,000 | \$ 390.00 | \$ 0.0026 | \$ 390.00 | United Energy |
| | TRANSCO | 3-6 | N | 300,000 | \$ 12,000.00 | \$ 0.0400 | \$ 12,000.00 | Shell |
| | TRANSCO | 3-6 | N | 300,000 | \$ 6,000.00 | \$ 0.0200 | \$ 6,000.00 | Spotlight |
| | TRANSCO | 3-6 | N | <u>300,000</u> | <u>\$ 15,750.00</u> | <u>\$ 0.0525</u> | <u>\$ 15,750.00</u> | Hartree Partners |
| | | | | <u>1,684,650</u> | | | <u>\$ 343,160.40</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|---------|----------|-----------|---------------|------------------|----------------|------------|----------------------|----------------------|
| July-19 | TETCO | ELA - M-3 | N | 14,725 | \$ 8,954.27 | \$ 0.6081 | \$ 8,954.27 | Energy Plus |
| | TETCO | ELA - M-3 | N | 496 | \$ 301.62 | \$ 0.6081 | \$ 301.62 | Energy Plus |
| | TETCO | ELA - M-3 | N | 135,129 | \$ 82,171.94 | \$ 0.6081 | \$ 82,171.94 | CNE |
| | TETCO | ELA - M-3 | N | 124 | \$ 75.40 | \$ 0.6081 | \$ 75.40 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 29,326 | \$ 17,833.15 | \$ 0.6081 | \$ 17,833.15 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,666 | \$ 1,621.18 | \$ 0.6081 | \$ 1,621.18 | Shipley |
| | TETCO | ELA - M-3 | N | 1,302 | \$ 791.76 | \$ 0.6081 | \$ 791.76 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 16,306 | \$ 9,915.69 | \$ 0.6081 | \$ 9,915.69 | Sprague |
| | TETCO | ELA - M-3 | N | 992 | \$ 603.24 | \$ 0.6081 | \$ 603.24 | American Gas & Power |
| | TETCO | ELA - M-3 | N | 42,656 | \$ 25,939.12 | \$ 0.6081 | \$ 25,939.12 | SFE Energy |
| | TETCO | ELA - M-3 | N | 11,222 | \$ 6,824.10 | \$ 0.6081 | \$ 6,824.10 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,611 | \$ 3,412.04 | \$ 0.6081 | \$ 3,412.04 | Josco Energy |
| | TETCO | ELA - M-3 | N | 186 | \$ 113.10 | \$ 0.6081 | \$ 113.10 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 141,484 | \$ 86,036.42 | \$ 0.6081 | \$ 86,036.42 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 4,929 | \$ 2,997.32 | \$ 0.6081 | \$ 2,997.32 | WGL Energy |
| | TETCO | ELA - M-3 | N | 63,519 | \$ 38,625.89 | \$ 0.6081 | \$ 38,625.89 | Direct Energy |
| | TETCO | ELA - M-3 | N | 15,128 | \$ 9,199.33 | \$ 0.6081 | \$ 9,199.33 | Palmco |
| | TETCO | ELA - M-3 | N | 13,516 | \$ 8,219.08 | \$ 0.6081 | \$ 8,219.08 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 93 | \$ 56.56 | \$ 0.6082 | \$ 56.56 | Marathon Power |
| | TETCO | ELA - M-3 | N | 2,201 | \$ 1,338.42 | \$ 0.6081 | \$ 1,338.42 | MPOWER Energy |
| | TETCO | STX - M3 | N | 486,948 | \$ 26,295.19 | \$ 0.0540 | \$ 26,295.19 | Colonial Energy |
| | TETCO | STX - M3 | N | 251,534 | \$ 9,306.76 | \$ 0.0370 | \$ 9,306.76 | Sequent |
| | TETCO | WLA - M3 | N | 558,000 | \$ 108,475.23 | \$ 0.1944 | \$ 108,475.23 | Grays Ferry |
| | TETCO | WLA - M3 | N | 558,000 | \$ 108,475.23 | \$ 0.1944 | \$ 108,475.23 | Grays Ferry |
| | | | | <u>2,356,093</u> | | | <u>\$ 557,582.04</u> | |
| | TRANSCO | 3-6 | N | 93 | \$ 58.90 | \$ 0.6333 | \$ 58.90 | Marathon Power, LLC |
| | TRANSCO | 3-6 | N | 186 | \$ 117.80 | \$ 0.6333 | \$ 117.80 | Median Energy |
| | TRANSCO | 3-6 | N | 155 | \$ 98.27 | \$ 0.6340 | \$ 98.27 | Volunteer |
| | TRANSCO | 3-6 | N | 1,302 | \$ 824.29 | \$ 0.6331 | \$ 824.29 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,201 | \$ 1,393.14 | \$ 0.6330 | \$ 1,393.14 | MPOWER |
| | TRANSCO | 3-6 | N | 2,697 | \$ 1,707.17 | \$ 0.6330 | \$ 1,707.17 | Shipley |
| | TRANSCO | 3-6 | N | 4,929 | \$ 3,119.84 | \$ 0.6330 | \$ 3,119.84 | WGL |
| | TRANSCO | 3-6 | N | 5,642 | \$ 3,571.20 | \$ 0.6330 | \$ 3,571.20 | Josco |
| | TRANSCO | 3-6 | N | 11,253 | \$ 7,122.56 | \$ 0.6329 | \$ 7,122.56 | Atlantic |
| | TRANSCO | 3-6 | N | 13,516 | \$ 8,554.76 | \$ 0.6329 | \$ 8,554.76 | CIMA |
| | TRANSCO | 3-6 | N | 527 | \$ 333.56 | \$ 0.6329 | \$ 333.56 | Energy Plus |
| | TRANSCO | 3-6 | N | 14,725 | \$ 9,319.84 | \$ 0.6329 | \$ 9,319.84 | Energy Plus |
| | TRANSCO | 3-6 | N | 1,023 | \$ 647.28 | \$ 0.6327 | \$ 647.28 | American Gas & Power |
| | TRANSCO | 3-6 | N | 16,306 | \$ 10,320.52 | \$ 0.6329 | \$ 10,320.52 | Sprague |
| | TRANSCO | 3-6 | N | 15,159 | \$ 9,594.81 | \$ 0.6329 | \$ 9,594.81 | Palmco |
| | TRANSCO | 3-6 | N | 29,357 | \$ 18,581.09 | \$ 0.6329 | \$ 18,581.09 | Vista |
| | TRANSCO | 3-6 | N | 42,687 | \$ 27,018.36 | \$ 0.6329 | \$ 27,018.36 | SFE |
| | TRANSCO | 3-6 | N | 63,550 | \$ 40,223.12 | \$ 0.6329 | \$ 40,223.12 | Direct Energy |
| | TRANSCO | 3-6 | N | 135,129 | \$ 85,528.38 | \$ 0.6329 | \$ 85,528.38 | CNE |
| | TRANSCO | 3-6 | N | 141,484 | \$ 89,550.94 | \$ 0.6329 | \$ 89,550.94 | UGI |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,340.50 | \$ 0.0151 | \$ 2,340.50 | United Energy |
| | TRANSCO | 2-3 | N | 155,000 | \$ 403.00 | \$ 0.0026 | \$ 403.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 12,400.00 | \$ 0.0400 | \$ 12,400.00 | Shell |
| | TRANSCO | 3-6 | N | 310,000 | \$ 6,200.00 | \$ 0.0200 | \$ 6,200.00 | Spotlight |
| | TRANSCO | 3-6 | N | 310,000 | \$ 16,275.00 | \$ 0.0525 | \$ 16,275.00 | Hartree Partners |
| | | | | <u>1,741,921</u> | | | <u>\$ 355,304.33</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|-----------|----------|-----------|---------------|------------------|----------------|------------|----------------------|----------------------|
| August-19 | TETCO | ELA - M-3 | N | 14,849 | \$ 9,135.10 | \$ 0.6152 | \$ 9,135.10 | Energy Plus |
| | TETCO | ELA - M-3 | N | 527 | \$ 324.21 | \$ 0.6152 | \$ 324.21 | Energy Plus |
| | TETCO | ELA - M-3 | N | 124 | \$ 76.28 | \$ 0.6152 | \$ 76.28 | Volunteer Energy |
| | TETCO | ELA - M-3 | N | 28,303 | \$ 17,412.00 | \$ 0.6152 | \$ 17,412.00 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,697 | \$ 1,659.20 | \$ 0.6152 | \$ 1,659.20 | Shipley |
| | TETCO | ELA - M-3 | N | 1,426 | \$ 877.29 | \$ 0.6152 | \$ 877.29 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 17,267 | \$ 10,622.66 | \$ 0.6152 | \$ 10,622.66 | Sprague |
| | TETCO | ELA - M-3 | N | 1,054 | \$ 648.42 | \$ 0.6152 | \$ 648.42 | American Gas & Power |
| | TETCO | ELA - M-3 | N | 45,601 | \$ 28,053.73 | \$ 0.6152 | \$ 28,053.73 | SFE Energy |
| | TETCO | ELA - M-3 | N | 11,036 | \$ 6,789.35 | \$ 0.6152 | \$ 6,789.35 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,642 | \$ 3,470.96 | \$ 0.6152 | \$ 3,470.96 | Josco Energy |
| | TETCO | ELA - M-3 | N | 248 | \$ 152.57 | \$ 0.6152 | \$ 152.57 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 139,748 | \$ 85,972.97 | \$ 0.6152 | \$ 85,972.97 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 4,898 | \$ 3,013.24 | \$ 0.6152 | \$ 3,013.24 | WGL Energy |
| | TETCO | ELA - M-3 | N | 66,340 | \$ 40,812.37 | \$ 0.6152 | \$ 40,812.37 | Direct Energy |
| | TETCO | ELA - M-3 | N | 133,920 | \$ 82,387.58 | \$ 0.6152 | \$ 82,387.58 | Exelon |
| | TETCO | ELA - M-3 | N | 31 | \$ 19.07 | \$ 0.6152 | \$ 19.07 | Park Power, LLC |
| | TETCO | ELA - M-3 | N | 558 | \$ 343.28 | \$ 0.6152 | \$ 343.28 | Alpha Gas & Electric |
| | TETCO | ELA - M-3 | N | 14,105 | \$ 8,677.39 | \$ 0.6152 | \$ 8,677.39 | Palmco |
| | TETCO | ELA - M-3 | N | 13,299 | \$ 8,181.55 | \$ 0.6152 | \$ 8,181.55 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 248 | \$ 152.57 | \$ 0.6152 | \$ 152.57 | Marathon Power |
| | TETCO | ELA - M-3 | N | 2,170 | \$ 1,334.97 | \$ 0.6152 | \$ 1,334.97 | Mpower Energy |
| | TETCO | STX - M3 | N | 486,948 | \$ 26,295.19 | \$ 0.0540 | \$ 26,295.19 | Colonial Energy |
| | TETCO | STX - M3 | N | 251,534 | \$ 9,306.76 | \$ 0.0370 | \$ 9,306.76 | Sequent |
| | TETCO | WLA - M3 | N | 558,000 | \$ 108,084.57 | \$ 0.1937 | \$ 108,084.57 | Grays Ferry |
| | TETCO | WLA - M3 | N | 558,000 | \$ 108,084.57 | \$ 0.1937 | \$ 108,084.57 | Grays Ferry |
| | | | | <u>2,358,573</u> | | | <u>\$ 561,887.85</u> | |
| | TRANSCO | 3-6 | N | 279 | \$ 176.39 | \$ 0.63222 | \$ 176.39 | Marathon Power, LLC |
| | TRANSCO | 3-6 | N | 248 | \$ 157.17 | \$ 0.63375 | \$ 157.17 | Median Energy |
| | TRANSCO | 3-6 | N | 124 | \$ 78.43 | \$ 0.63250 | \$ 78.43 | Volunteer |
| | TRANSCO | 3-6 | N | 1,457 | \$ 922.25 | \$ 0.63298 | \$ 922.25 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,170 | \$ 1,373.61 | \$ 0.63300 | \$ 1,373.61 | Mpower |
| | TRANSCO | 3-6 | N | 2,728 | \$ 1,726.70 | \$ 0.63295 | \$ 1,726.70 | Shipley |
| | TRANSCO | 3-6 | N | 4,929 | \$ 3,119.84 | \$ 0.63296 | \$ 3,119.84 | WGL |
| | TRANSCO | 3-6 | N | 5,673 | \$ 3,590.73 | \$ 0.63295 | \$ 3,590.73 | Josco |
| | TRANSCO | 3-6 | N | 11,036 | \$ 6,985.23 | \$ 0.63295 | \$ 6,985.23 | Atlantic |
| | TRANSCO | 3-6 | N | 13,299 | \$ 8,417.43 | \$ 0.63294 | \$ 8,417.43 | CIMA |
| | TRANSCO | 3-6 | N | 527 | \$ 333.56 | \$ 0.63294 | \$ 333.56 | Energy Plus |
| | TRANSCO | 3-6 | N | 558 | \$ 353.40 | \$ 0.63333 | \$ 353.40 | Alpha Gas & Electric |
| | TRANSCO | 3-6 | N | 1,054 | \$ 667.12 | \$ 0.63294 | \$ 667.12 | American Gas & Power |
| | TRANSCO | 3-6 | N | 17,298 | \$ 10,948.58 | \$ 0.63294 | \$ 10,948.58 | Sprague |
| | TRANSCO | 3-6 | N | 14,136 | \$ 8,947.22 | \$ 0.63294 | \$ 8,947.22 | Palmco |
| | TRANSCO | 3-6 | N | 14,849 | \$ 9,398.58 | \$ 0.63294 | \$ 9,398.58 | Energy Plus |
| | TRANSCO | 3-6 | N | 28,303 | \$ 17,913.97 | \$ 0.63294 | \$ 17,913.97 | Vista |
| | TRANSCO | 3-6 | N | 45,632 | \$ 28,882.39 | \$ 0.63294 | \$ 28,882.39 | SFE |
| | TRANSCO | 3-6 | N | 66,371 | \$ 42,009.03 | \$ 0.63294 | \$ 42,009.03 | Direct Energy |
| | TRANSCO | 3-6 | N | 133,920 | \$ 84,763.61 | \$ 0.63294 | \$ 84,763.61 | Exelon |
| | TRANSCO | 3-6 | N | 62 | \$ 39.06 | \$ 0.63000 | \$ 39.06 | Park Power, LLC |
| | TRANSCO | 3-6 | N | 139,748 | \$ 88,452.30 | \$ 0.63294 | \$ 88,452.30 | UGI |
| | TRANSCO | 3-6 | N | 310,000 | \$ 12,400.00 | \$ 0.04000 | \$ 12,400.00 | Shell |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,340.50 | \$ 0.01510 | \$ 2,340.50 | United Energy |
| | TRANSCO | 2-3 | N | 155,000 | \$ 403.00 | \$ 0.00260 | \$ 403.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 6,200.00 | \$ 0.02000 | \$ 6,200.00 | Spotlight |
| | TRANSCO | 3-6 | N | 310,000 | \$ 6,510.00 | \$ 0.02100 | \$ 6,510.00 | Spotlight |
| | TRANSCO | 3-6 | N | 310,000 | \$ 16,275.00 | \$ 0.05250 | \$ 16,275.00 | Hartree Partners |
| | | | | <u>2,054,401</u> | | | <u>\$ 363,385.10</u> | |

Philadelphia Gas Works
 Pennsylvania Public Utilities Commission
 52 Pa. Code §53.61, et seq.
 For the Twelve Months Ending December 31, 2019

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|--------------|----------|-----------|------------------|------------------|----------------|----------------------|----------------------|----------------------|
| September-19 | TETCO | ELA - M-3 | N | 14,880 | \$ 9,154.18 | \$ 0.6152 | \$ 9,154.18 | Energy Plus |
| | TETCO | ELA - M-3 | N | 480 | \$ 295.30 | \$ 0.6152 | \$ 295.30 | Energy Plus |
| | TETCO | ELA - M-3 | N | 26,010 | \$ 16,001.36 | \$ 0.6152 | \$ 16,001.36 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,640 | \$ 1,624.13 | \$ 0.6152 | \$ 1,624.13 | Shipley |
| | TETCO | ELA - M-3 | N | 1,590 | \$ 978.16 | \$ 0.6152 | \$ 978.16 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 13,950 | \$ 8,582.05 | \$ 0.6152 | \$ 8,582.05 | Sprague |
| | TETCO | ELA - M-3 | N | 1,080 | \$ 664.42 | \$ 0.6152 | \$ 664.42 | American Gas & Power |
| | TETCO | ELA - M-3 | N | 45,840 | \$ 28,200.77 | \$ 0.6152 | \$ 28,200.77 | SFE Energy |
| | TETCO | ELA - M-3 | N | 9,810 | \$ 6,035.12 | \$ 0.6152 | \$ 6,035.12 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,520 | \$ 3,395.90 | \$ 0.6152 | \$ 3,395.90 | Josco Energy |
| | TETCO | ELA - M-3 | N | 180 | \$ 110.74 | \$ 0.6152 | \$ 110.74 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 131,580 | \$ 80,948.02 | \$ 0.6152 | \$ 80,948.02 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 5,040 | \$ 3,100.61 | \$ 0.6152 | \$ 3,100.61 | WGL Energy |
| | TETCO | ELA - M-3 | N | 64,740 | \$ 39,828.05 | \$ 0.6152 | \$ 39,828.05 | Direct Energy |
| | TETCO | ELA - M-3 | N | 127,800 | \$ 78,622.56 | \$ 0.6152 | \$ 78,622.56 | Exelon |
| | TETCO | ELA - M-3 | N | 1,050 | \$ 645.97 | \$ 0.6152 | \$ 645.97 | Park Power, LLC |
| | TETCO | ELA - M-3 | N | 1,140 | \$ 701.33 | \$ 0.6152 | \$ 701.33 | Alpha Gas & Electric |
| | TETCO | ELA - M-3 | N | 12,690 | \$ 7,806.88 | \$ 0.6152 | \$ 7,806.88 | Palmco |
| | TETCO | ELA - M-3 | N | 13,530 | \$ 8,323.67 | \$ 0.6152 | \$ 8,323.67 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 6,180 | \$ 3,801.94 | \$ 0.6152 | \$ 3,801.94 | Marathon Power |
| | TETCO | ELA - M-3 | N | 2,160 | \$ 1,328.83 | \$ 0.6152 | \$ 1,328.83 | MPower Energy |
| | TETCO | STX - M3 | N | 471,240 | \$ 25,446.96 | \$ 0.0540 | \$ 25,446.96 | Colonial Energy |
| | TETCO | STX - M3 | N | 243,420 | \$ 9,006.54 | \$ 0.0370 | \$ 9,006.54 | Sequent |
| | TETCO | WLA - M3 | N | 540,000 | \$ 153,792.03 | \$ 0.2848 | \$ 153,792.03 | Grays Ferry |
| | TETCO | WLA - M3 | N | 540,000 | \$ 153,792.03 | \$ 0.2848 | \$ 153,792.03 | Grays Ferry |
| | | | | <u>2,282,550</u> | | | <u>\$ 642,187.55</u> | |
| | TRANSCO | 3-6 | N | 6,210 | \$ 3,930.60 | \$ 0.63295 | \$ 3,930.60 | Marathon Power, LLC |
| | TRANSCO | 3-6 | N | 210 | \$ 132.90 | \$ 0.63286 | \$ 132.90 | Median Energy |
| | TRANSCO | 3-6 | N | 1,590 | \$ 1,006.50 | \$ 0.63302 | \$ 1,006.50 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,160 | \$ 1,367.10 | \$ 0.63292 | \$ 1,367.10 | MPower |
| | TRANSCO | 3-6 | N | 2,670 | \$ 1,689.90 | \$ 0.63292 | \$ 1,689.90 | Shipley |
| | TRANSCO | 3-6 | N | 5,040 | \$ 3,189.90 | \$ 0.63292 | \$ 3,189.90 | WGL |
| | TRANSCO | 3-6 | N | 5,550 | \$ 3,512.70 | \$ 0.63292 | \$ 3,512.70 | Josco |
| | TRANSCO | 3-6 | N | 9,840 | \$ 6,228.00 | \$ 0.63293 | \$ 6,228.00 | Atlantic |
| | TRANSCO | 3-6 | N | 13,560 | \$ 8,582.70 | \$ 0.63294 | \$ 8,582.70 | CIMA |
| | TRANSCO | 3-6 | N | 510 | \$ 322.80 | \$ 0.63294 | \$ 322.80 | Energy Plus |
| | TRANSCO | 3-6 | N | 1,170 | \$ 740.70 | \$ 0.63308 | \$ 740.70 | Alpha Gas & Electric |
| | TRANSCO | 3-6 | N | 1,080 | \$ 683.40 | \$ 0.63278 | \$ 683.40 | American Gas & Power |
| | TRANSCO | 3-6 | N | 13,950 | \$ 8,829.30 | \$ 0.63292 | \$ 8,829.30 | Sprague |
| | TRANSCO | 3-6 | N | 12,720 | \$ 8,050.80 | \$ 0.63292 | \$ 8,050.80 | Palmco |
| | TRANSCO | 3-6 | N | 14,880 | \$ 9,418.20 | \$ 0.63294 | \$ 9,418.20 | Energy Plus |
| | TRANSCO | 3-6 | N | 26,040 | \$ 16,482.00 | \$ 0.63295 | \$ 16,482.00 | Vista |
| | TRANSCO | 3-6 | N | 45,870 | \$ 29,033.10 | \$ 0.63294 | \$ 29,033.10 | SFE |
| | TRANSCO | 3-6 | N | 64,770 | \$ 40,995.60 | \$ 0.63294 | \$ 40,995.60 | Direct Energy |
| | TRANSCO | 3-6 | N | 127,830 | \$ 80,908.80 | \$ 0.63294 | \$ 80,908.80 | Exelon |
| | TRANSCO | 3-6 | N | 1,080 | \$ 683.40 | \$ 0.63278 | \$ 683.40 | Park Power, LLC |
| | TRANSCO | 3-6 | N | 131,610 | \$ 83,301.30 | \$ 0.63294 | \$ 83,301.30 | UGI |
| | TRANSCO | 1-3 | N | 150,000 | \$ 2,265.00 | \$ 0.01510 | \$ 2,265.00 | United Energy |
| | TRANSCO | 2-3 | N | 150,000 | \$ 390.00 | \$ 0.00260 | \$ 390.00 | United Energy |
| | TRANSCO | 3-6 | N | 300,000 | \$ 12,000.00 | \$ 0.04000 | \$ 12,000.00 | Shell |
| | TRANSCO | 3-6 | N | 300,000 | \$ 6,000.00 | \$ 0.02000 | \$ 6,000.00 | Spotlight |
| | TRANSCO | 3-6 | N | 300,000 | \$ 6,300.00 | \$ 0.02100 | \$ 6,300.00 | Spotlight |
| | TRANSCO | 3-6 | N | 300,000 | \$ 15,750.00 | \$ 0.05250 | \$ 15,750.00 | Hartree Partners |
| | | | <u>1,988,340</u> | | | <u>\$ 351,794.70</u> | | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|------------|----------|-----------|---------------|------------------|----------------|------------|----------------------|----------------------|
| October-19 | TETCO | ELA - M-3 | N | 15,531 | \$ 9,554.67 | \$ 0.6152 | \$ 9,554.67 | Energy Plus |
| | TETCO | ELA - M-3 | N | 434 | \$ 267.01 | \$ 0.6152 | \$ 267.01 | Energy Plus |
| | TETCO | ELA - M-3 | N | 24,707 | \$ 15,199.74 | \$ 0.6152 | \$ 15,199.74 | Vista Energy |
| | TETCO | ELA - M-3 | N | 2,821 | \$ 1,735.48 | \$ 0.6152 | \$ 1,735.48 | Shipley |
| | TETCO | ELA - M-3 | N | 1,612 | \$ 991.70 | \$ 0.6152 | \$ 991.70 | V3 Commodities |
| | TETCO | ELA - M-3 | N | 14,539 | \$ 8,944.39 | \$ 0.6152 | \$ 8,944.39 | Sprague |
| | TETCO | ELA - M-3 | N | 1,085 | \$ 667.50 | \$ 0.6152 | \$ 667.50 | American Gas & Power |
| | TETCO | ELA - M-3 | N | 44,671 | \$ 27,481.61 | \$ 0.6152 | \$ 27,481.61 | SFE Energy |
| | TETCO | ELA - M-3 | N | 8,928 | \$ 5,492.51 | \$ 0.6152 | \$ 5,492.51 | Atlantic Energy |
| | TETCO | ELA - M-3 | N | 5,487 | \$ 3,375.60 | \$ 0.6152 | \$ 3,375.60 | Josco Energy |
| | TETCO | ELA - M-3 | N | 217 | \$ 133.50 | \$ 0.6152 | \$ 133.50 | Median Energy Corp. |
| | TETCO | ELA - M-3 | N | 128,464 | \$ 79,031.05 | \$ 0.6152 | \$ 79,031.05 | UGI Energy Services |
| | TETCO | ELA - M-3 | N | 4,712 | \$ 2,898.82 | \$ 0.6152 | \$ 2,898.82 | WGL Energy |
| | TETCO | ELA - M-3 | N | 63,860 | \$ 39,286.67 | \$ 0.6152 | \$ 39,286.67 | Direct Energy |
| | TETCO | ELA - M-3 | N | 125,643 | \$ 77,295.57 | \$ 0.6152 | \$ 77,295.57 | Exelon |
| | TETCO | ELA - M-3 | N | 2,821 | \$ 1,735.48 | \$ 0.6152 | \$ 1,735.48 | Park Power, LLC |
| | TETCO | ELA - M-3 | N | 1,674 | \$ 1,029.83 | \$ 0.6152 | \$ 1,029.83 | Alpha Gas & Electric |
| | TETCO | ELA - M-3 | N | 11,594 | \$ 7,132.62 | \$ 0.6152 | \$ 7,132.62 | Palmco |
| | TETCO | ELA - M-3 | N | 9,517 | \$ 5,854.86 | \$ 0.6152 | \$ 5,854.86 | CIMA Energy |
| | TETCO | ELA - M-3 | N | 6,789 | \$ 4,176.60 | \$ 0.6152 | \$ 4,176.60 | Marathon Power |
| | TETCO | ELA - M-3 | N | 2,077 | \$ 1,277.77 | \$ 0.6152 | \$ 1,277.77 | Mpower Energy |
| | TETCO | ELA - M-3 | N | 279 | \$ 171.64 | \$ 0.6152 | \$ 171.64 | EDF Trading |
| | TETCO | STX - M3 | N | 486,948 | \$ 26,295.19 | \$ 0.0540 | \$ 26,295.19 | Colonial Energy |
| | TETCO | STX - M3 | N | 251,534 | \$ 9,306.76 | \$ 0.0370 | \$ 9,306.76 | Sequent |
| | TETCO | WLA - M3 | N | 558,000 | \$ 26,505.00 | \$ 0.0475 | \$ 26,505.00 | Sequent |
| | TETCO | WLA - M3 | N | 558,000 | \$ 27,900.00 | \$ 0.0500 | \$ 27,900.00 | Sequent |
| | | | | <u>2,331,944</u> | | | <u>\$ 383,741.57</u> | |
| | TRANSCO | 3-6 | N | 310 | \$ 196.23 | \$ 0.63300 | \$ 196.23 | EDF Trading |
| | TRANSCO | 3-6 | N | 6,820 | \$ 4,316.75 | \$ 0.63295 | \$ 4,316.75 | Marathon Power, LLC |
| | TRANSCO | 3-6 | N | 217 | \$ 137.33 | \$ 0.63286 | \$ 137.33 | Median Energy |
| | TRANSCO | 3-6 | N | 1,612 | \$ 1,020.21 | \$ 0.63288 | \$ 1,020.21 | V3 Commodities Group |
| | TRANSCO | 3-6 | N | 2,077 | \$ 1,314.40 | \$ 0.63284 | \$ 1,314.40 | Mpower |
| | TRANSCO | 3-6 | N | 2,852 | \$ 1,805.13 | \$ 0.63293 | \$ 1,805.13 | Shipley |
| | TRANSCO | 3-6 | N | 4,712 | \$ 2,982.51 | \$ 0.63296 | \$ 2,982.51 | WGL |
| | TRANSCO | 3-6 | N | 5,487 | \$ 3,472.93 | \$ 0.63294 | \$ 3,472.93 | Josco |
| | TRANSCO | 3-6 | N | 8,928 | \$ 5,650.99 | \$ 0.63295 | \$ 5,650.99 | Atlantic |
| | TRANSCO | 3-6 | N | 9,548 | \$ 6,043.14 | \$ 0.63292 | \$ 6,043.14 | CIMA |
| | TRANSCO | 3-6 | N | 15,562 | \$ 9,849.63 | \$ 0.63293 | \$ 9,849.63 | Energy Plus |
| | TRANSCO | 3-6 | N | 1,674 | \$ 1,059.58 | \$ 0.63296 | \$ 1,059.58 | Alpha Gas & Electric |
| | TRANSCO | 3-6 | N | 1,116 | \$ 706.18 | \$ 0.63278 | \$ 706.18 | American Gas & Power |
| | TRANSCO | 3-6 | N | 14,570 | \$ 9,221.88 | \$ 0.63294 | \$ 9,221.88 | Sprague |
| | TRANSCO | 3-6 | N | 11,594 | \$ 7,338.32 | \$ 0.63294 | \$ 7,338.32 | Palmco |
| | TRANSCO | 3-6 | N | 465 | \$ 294.50 | \$ 0.63333 | \$ 294.50 | Energy Plus |
| | TRANSCO | 3-6 | N | 24,707 | \$ 15,637.95 | \$ 0.63294 | \$ 15,637.95 | Vista |
| | TRANSCO | 3-6 | N | 44,671 | \$ 28,273.86 | \$ 0.63294 | \$ 28,273.86 | SFE |
| | TRANSCO | 3-6 | N | 63,891 | \$ 40,439.19 | \$ 0.63294 | \$ 40,439.19 | Direct Energy |
| | TRANSCO | 3-6 | N | 125,674 | \$ 79,544.14 | \$ 0.63294 | \$ 79,544.14 | Exelon |
| | TRANSCO | 3-6 | N | 2,821 | \$ 1,785.29 | \$ 0.63286 | \$ 1,785.29 | Park Power, LLC |
| | TRANSCO | 3-6 | N | 128,464 | \$ 81,309.90 | \$ 0.63294 | \$ 81,309.90 | UGI |
| | TRANSCO | 1-3 | N | 155,000 | \$ 2,340.50 | \$ 0.01510 | \$ 2,340.50 | United Energy |
| | TRANSCO | 2-3 | N | 155,000 | \$ 403.00 | \$ 0.00260 | \$ 403.00 | United Energy |
| | TRANSCO | 3-6 | N | 310,000 | \$ 12,400.00 | \$ 0.04000 | \$ 12,400.00 | Shell |
| | TRANSCO | 3-6 | N | 310,000 | \$ 6,200.00 | \$ 0.02000 | \$ 6,200.00 | Spotlight |
| | TRANSCO | 3-6 | N | 310,000 | \$ 6,510.00 | \$ 0.02100 | \$ 6,510.00 | Spotlight |
| | TRANSCO | 3-6 | N | 310,000 | \$ 16,275.00 | \$ 0.05250 | \$ 16,275.00 | Hartree Partners |
| | | | | <u>2,027,772</u> | | | <u>\$ 346,528.54</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|-------------|----------|----------|---------------|------------------|----------------|------------|------------------------|----------------------|
| November-19 | TETCO | STX - M3 | N | 16,860 | \$ 11,948.03 | \$ 0.7087 | \$ 11,948.03 | Energy Plus |
| | TETCO | STX - M3 | N | 450 | \$ 323.47 | \$ 0.7188 | \$ 323.47 | Energy Plus |
| | TETCO | STX - M3 | N | 24,720 | \$ 17,510.77 | \$ 0.7084 | \$ 17,510.77 | Vista Energy |
| | TETCO | STX - M3 | N | 2,730 | \$ 1,931.26 | \$ 0.7074 | \$ 1,931.26 | Shipley |
| | TETCO | STX - M3 | N | 1,440 | \$ 1,016.43 | \$ 0.7059 | \$ 1,016.43 | V3 Commodities |
| | TETCO | STX - M3 | N | 16,500 | \$ 11,689.26 | \$ 0.7084 | \$ 11,689.26 | Sprague |
| | TETCO | STX - M3 | N | 1,260 | \$ 896.36 | \$ 0.7114 | \$ 896.36 | American Gas & Power |
| | TETCO | STX - M3 | N | 47,760 | \$ 33,838.82 | \$ 0.7085 | \$ 33,838.82 | SFE Energy |
| | TETCO | STX - M3 | N | 9,150 | \$ 6,486.90 | \$ 0.7090 | \$ 6,486.90 | Atlantic Energy |
| | TETCO | STX - M3 | N | 5,850 | \$ 4,149.05 | \$ 0.7092 | \$ 4,149.05 | Josco Energy |
| | TETCO | STX - M3 | N | 300 | \$ 212.53 | \$ 0.7084 | \$ 212.53 | Median Energy Corp. |
| | TETCO | STX - M3 | N | 131,580 | \$ 93,218.40 | \$ 0.7085 | \$ 93,218.40 | UGI Energy Services |
| | TETCO | STX - M3 | N | 5,460 | \$ 3,871.81 | \$ 0.7091 | \$ 3,871.81 | WGL Energy |
| | TETCO | STX - M3 | N | 64,830 | \$ 45,925.38 | \$ 0.7084 | \$ 45,925.38 | Direct Energy |
| | TETCO | STX - M3 | N | 137,790 | \$ 97,616.87 | \$ 0.7084 | \$ 97,616.87 | Exelon |
| | TETCO | STX - M3 | N | 4,560 | \$ 3,234.21 | \$ 0.7093 | \$ 3,234.21 | Park Power, LLC |
| | TETCO | STX - M3 | N | 1,560 | \$ 1,108.89 | \$ 0.7108 | \$ 1,108.89 | Alpha Gas & Electric |
| | TETCO | STX - M3 | N | 11,520 | \$ 8,159.36 | \$ 0.7083 | \$ 8,159.36 | Palmco |
| | TETCO | STX - M3 | N | 8,190 | \$ 5,803.05 | \$ 0.7086 | \$ 5,803.05 | CIMA Energy |
| | TETCO | STX - M3 | N | 6,780 | \$ 4,805.09 | \$ 0.7087 | \$ 4,805.09 | Marathon Power |
| | TETCO | STX - M3 | N | 2,550 | \$ 1,811.19 | \$ 0.7103 | \$ 1,811.19 | MPOWER Energy |
| | TETCO | STX - M3 | N | 630 | \$ 443.53 | \$ 0.7040 | \$ 443.53 | Statewise |
| | TETCO | STX - M3 | N | 450 | \$ 323.47 | \$ 0.7188 | \$ 323.47 | EDF Trading |
| | TETCO | M3 - M3 | N | 471,240 | \$ 117,810.00 | \$ 0.2500 | \$ 117,810.00 | Paulsboro |
| | TETCO | STX - M3 | N | 471,240 | \$ 541,926.00 | \$ 1.1500 | \$ 541,926.00 | Vitol |
| | TETCO | STX - M3 | N | 90,000 | \$ 85,500.00 | \$ 0.9500 | \$ 85,500.00 | Vitol |
| | | | | <u>1,535,400</u> | | | <u>\$ 1,101,560.13</u> | |
| | TRANSCO | 2-6 | N | 480 | \$ 324.30 | \$ 0.67563 | \$ 324.30 | EDF Trading |
| | TRANSCO | 2-6 | N | 6,810 | \$ 4,600.80 | \$ 0.67559 | \$ 4,600.80 | Marathon Power, LLC |
| | TRANSCO | 2-6 | N | 300 | \$ 202.80 | \$ 0.67600 | \$ 202.80 | Median Energy |
| | TRANSCO | 2-6 | N | 1,470 | \$ 993.30 | \$ 0.67571 | \$ 993.30 | V3 Commodities Group |
| | TRANSCO | 2-6 | N | 2,580 | \$ 1,743.00 | \$ 0.67558 | \$ 1,743.00 | MPOWER |
| | TRANSCO | 2-6 | N | 2,730 | \$ 1,844.10 | \$ 0.67549 | \$ 1,844.10 | Shipley |
| | TRANSCO | 2-6 | N | 5,460 | \$ 3,688.80 | \$ 0.67560 | \$ 3,688.80 | WGL |
| | TRANSCO | 2-6 | N | 5,850 | \$ 3,952.20 | \$ 0.67559 | \$ 3,952.20 | Josco |
| | TRANSCO | 2-6 | N | 9,150 | \$ 6,181.50 | \$ 0.67557 | \$ 6,181.50 | Atlantic |
| | TRANSCO | 2-6 | N | 8,190 | \$ 5,532.90 | \$ 0.67557 | \$ 5,532.90 | CIMA |
| | TRANSCO | 2-6 | N | 480 | \$ 324.30 | \$ 0.67563 | \$ 324.30 | Energy Plus |
| | TRANSCO | 2-6 | N | 1,560 | \$ 1,053.90 | \$ 0.67558 | \$ 1,053.90 | Alpha Gas & Electric |
| | TRANSCO | 2-6 | N | 1,260 | \$ 851.40 | \$ 0.67571 | \$ 851.40 | American Gas & Power |
| | TRANSCO | 2-6 | N | 16,500 | \$ 11,147.10 | \$ 0.67558 | \$ 11,147.10 | Sprague |
| | TRANSCO | 2-6 | N | 11,520 | \$ 7,782.60 | \$ 0.67557 | \$ 7,782.60 | Palmco |
| | TRANSCO | 2-6 | N | 16,860 | \$ 11,390.40 | \$ 0.67559 | \$ 11,390.40 | Energy Plus |
| | TRANSCO | 2-6 | N | 24,750 | \$ 16,720.50 | \$ 0.67558 | \$ 16,720.50 | Vista |
| | TRANSCO | 2-6 | N | 47,790 | \$ 32,286.00 | \$ 0.67558 | \$ 32,286.00 | SFE |
| | TRANSCO | 2-6 | N | 64,860 | \$ 43,818.30 | \$ 0.67558 | \$ 43,818.30 | Direct Energy |
| | TRANSCO | 2-6 | N | 660 | \$ 446.10 | \$ 0.67591 | \$ 446.10 | Statewise |
| | TRANSCO | 2-6 | N | 137,820 | \$ 93,108.60 | \$ 0.67558 | \$ 93,108.60 | Exelon |
| | TRANSCO | 2-6 | N | 4,590 | \$ 3,100.80 | \$ 0.67556 | \$ 3,100.80 | Park Power, LLC |
| | TRANSCO | 2-6 | N | 131,610 | \$ 88,913.10 | \$ 0.67558 | \$ 88,913.10 | UGI |
| | TRANSCO | 2-3 | N | 150,000 | \$ 4,890.00 | \$ 0.03260 | \$ 4,890.00 | BP |
| | TRANSCO | 3-6 | N | 300,000 | \$ 465,000.00 | \$ 1.55000 | \$ 465,000.00 | Shell |
| | | | | <u>953,280</u> | | | <u>\$ 809,896.80</u> | |

| | PIPELINE | PATH | RECALL STATUS | VOLUME DTH | MONTHLY CREDIT | CREDIT DTH | TOTAL CREDIT | REPLACEMENT SHIPPER |
|-------------|----------|----------|---------------|------------------|----------------|------------|-----------------|----------------------|
| December-19 | TETCO | STX - M3 | N | 558 | \$ 392.47 | \$ 0.7034 | \$ 392.47 | Energy Plus |
| | TETCO | STX - M3 | N | 19,189 | \$ 13,632.46 | \$ 0.7104 | \$ 13,632.46 | Energy Plus |
| | TETCO | STX - M3 | N | 25,296 | \$ 17,969.18 | \$ 0.7104 | \$ 17,969.18 | Vista Energy |
| | TETCO | STX - M3 | N | 3,038 | \$ 2,153.97 | \$ 0.7090 | \$ 2,153.97 | Shipley |
| | TETCO | STX - M3 | N | 1,519 | \$ 1,081.83 | \$ 0.7122 | \$ 1,081.83 | V3 Commodities |
| | TETCO | STX - M3 | N | 16,988 | \$ 12,062.38 | \$ 0.7101 | \$ 12,062.38 | Sprague |
| | TETCO | STX - M3 | N | 1,240 | \$ 880.76 | \$ 0.7103 | \$ 880.76 | American Gas & Power |
| | TETCO | STX - M3 | N | 50,809 | \$ 36,091.52 | \$ 0.7103 | \$ 36,091.52 | SFE Energy |
| | TETCO | STX - M3 | N | 9,579 | \$ 6,806.68 | \$ 0.7106 | \$ 6,806.68 | Atlantic Energy |
| | TETCO | STX - M3 | N | 6,076 | \$ 4,317.60 | \$ 0.7106 | \$ 4,317.60 | Josco Energy |
| | TETCO | STX - M3 | N | 372 | \$ 268.09 | \$ 0.7207 | \$ 268.09 | Median Energy Corp. |
| | TETCO | STX - M3 | N | 135,966 | \$ 96,575.85 | \$ 0.7103 | \$ 96,575.85 | UGI Energy Services |
| | TETCO | STX - M3 | N | 6,417 | \$ 4,556.91 | \$ 0.7101 | \$ 4,556.91 | WGL Energy |
| | TETCO | STX - M3 | N | 68,603 | \$ 48,728.31 | \$ 0.7103 | \$ 48,728.31 | Direct Energy |
| | TETCO | STX - M3 | N | 142,972 | \$ 101,554.02 | \$ 0.7103 | \$ 101,554.02 | Exelon |
| | TETCO | STX - M3 | N | 1,271 | \$ 899.88 | \$ 0.7080 | \$ 899.88 | Statewise |
| | TETCO | STX - M3 | N | 5,890 | \$ 4,183.54 | \$ 0.7103 | \$ 4,183.54 | Park Power, LLC |
| | TETCO | STX - M3 | N | 11,594 | \$ 8,233.06 | \$ 0.7101 | \$ 8,233.06 | Palmco |
| | TETCO | STX - M3 | N | 1,395 | \$ 995.67 | \$ 0.7137 | \$ 995.67 | Alpha Gas & Electric |
| | TETCO | STX - M3 | N | 8,401 | \$ 5,964.17 | \$ 0.7099 | \$ 5,964.17 | CIMA Energy |
| | TETCO | STX - M3 | N | 7,378 | \$ 5,236.59 | \$ 0.7098 | \$ 5,236.59 | Marathon Power |
| | TETCO | STX - M3 | N | 2,852 | \$ 2,029.58 | \$ 0.7116 | \$ 2,029.58 | MPower Energy |
| | TETCO | STX - M3 | N | 527 | \$ 373.35 | \$ 0.7084 | \$ 373.35 | EDF Trading |
| | TETCO | M3 - M3 | N | 486,948 | \$ 121,737.00 | \$ 0.2500 | \$ 121,737.00 | Paulsboro |
| | TETCO | STX - M3 | N | 486,948 | \$ 559,990.20 | \$ 1.1500 | \$ 559,990.20 | Vitol |
| | TETCO | STX - M3 | N | 93,000 | \$ 88,350.00 | \$ 0.9500 | \$ 88,350.00 | Vitol |
| | TETCO | M2 - M3 | | 100 | \$ - | \$ - | \$ - | Tioga LNG LLC* |
| | | | | <u>1,594,926</u> | \$ - | \$ - | \$ 1,145,065.07 | |
| | TRANSCO | 2-6 | N | 558 | \$ 376.96 | \$ 0.67556 | \$ 376.96 | EDF Trading |
| | TRANSCO | 2-6 | N | 7,409 | \$ 5,005.26 | \$ 0.67556 | \$ 5,005.26 | Marathon Power, LLC |
| | TRANSCO | 2-6 | N | 372 | \$ 251.10 | \$ 0.67500 | \$ 251.10 | Median Energy |
| | TRANSCO | 2-6 | N | 1,519 | \$ 1,026.41 | \$ 0.67571 | \$ 1,026.41 | V3 Commodities Group |
| | TRANSCO | 2-6 | N | 2,852 | \$ 1,926.65 | \$ 0.67554 | \$ 1,926.65 | MPower |
| | TRANSCO | 2-6 | N | 3,038 | \$ 2,052.20 | \$ 0.67551 | \$ 2,052.20 | Shipley |
| | TRANSCO | 2-6 | N | 6,417 | \$ 4,335.35 | \$ 0.67560 | \$ 4,335.35 | WGL |
| | TRANSCO | 2-6 | N | 6,076 | \$ 4,105.02 | \$ 0.67561 | \$ 4,105.02 | Josco |
| | TRANSCO | 2-6 | N | 9,579 | \$ 6,471.56 | \$ 0.67560 | \$ 6,471.56 | Atlantic |
| | TRANSCO | 2-6 | N | 8,432 | \$ 5,696.56 | \$ 0.67559 | \$ 5,696.56 | CIMA |
| | TRANSCO | 2-6 | N | 19,220 | \$ 12,984.66 | \$ 0.67558 | \$ 12,984.66 | Energy Plus |
| | TRANSCO | 2-6 | N | 1,395 | \$ 942.40 | \$ 0.67556 | \$ 942.40 | Alpha Gas & Electric |
| | TRANSCO | 2-6 | N | 1,271 | \$ 858.70 | \$ 0.67561 | \$ 858.70 | American Gas & Power |
| | TRANSCO | 2-6 | N | 17,019 | \$ 11,497.90 | \$ 0.67559 | \$ 11,497.90 | Sprague |
| | TRANSCO | 2-6 | N | 11,625 | \$ 7,853.85 | \$ 0.67560 | \$ 7,853.85 | Palmco |
| | TRANSCO | 2-6 | N | 558 | \$ 376.96 | \$ 0.67556 | \$ 376.96 | Energy Plus |
| | TRANSCO | 2-6 | N | 25,296 | \$ 17,089.68 | \$ 0.67559 | \$ 17,089.68 | Vista |
| | TRANSCO | 2-6 | N | 50,809 | \$ 34,325.37 | \$ 0.67558 | \$ 34,325.37 | SFE |
| | TRANSCO | 2-6 | N | 68,603 | \$ 46,346.86 | \$ 0.67558 | \$ 46,346.86 | Direct Energy |
| | TRANSCO | 2-6 | N | 1,302 | \$ 879.78 | \$ 0.67571 | \$ 879.78 | Statewise |
| | TRANSCO | 2-6 | N | 143,003 | \$ 96,609.95 | \$ 0.67558 | \$ 96,609.95 | Exelon |
| | TRANSCO | 2-6 | N | 5,921 | \$ 3,999.93 | \$ 0.67555 | \$ 3,999.93 | Park Power, LLC |
| | TRANSCO | 2-6 | N | 135,966 | \$ 91,855.79 | \$ 0.67558 | \$ 91,855.79 | UGI |
| | TRANSCO | 2-3 | N | 155,000 | \$ 5,053.00 | \$ 0.03260 | \$ 5,053.00 | BP |
| | TRANSCO | 3-6 | N | 310,000 | \$ 480,500.00 | \$ 1.55000 | \$ 480,500.00 | Shell |
| | TRANSCO | 4-5 | N | 1 | \$ - | \$ - | \$ - | Tioga LNG LLC* |
| | TRANSCO | 4-6 | N | 1 | \$ - | \$ - | \$ - | Tioga LNG LLC* |
| | TRANSCO | 4-6 | N | 100 | \$ - | \$ - | \$ - | Tioga LNG LLC* |
| | TRANSCO | 4-6 | N | <u>20,582</u> | \$ - | \$ - | \$ - | Tioga LNG LLC* |
| | | | | <u>1,013,924</u> | \$ - | \$ - | \$ 842,421.90 | |

* While the amount charged for the release is zero, the money will be recovered in the Sales Service Charge to make the GCR whole.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

- (8) A list of agreements to transport gas by the utility through its system, for other utilities, pipelines or jurisdictional customers including the quantity and price of the transportation.

Response:

Please see the attached list of gas transportation agreements for PGW's jurisdictional customers. PGW has no transportation agreements with other utilities or pipeline customers.

PHILADELPHIA GAS WORKS
JANUARY 2019 - DECEMBER 2019

| MTR_NBR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL_CCF | MDQ (dth) | MDQ (mcf) |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------|
| 2123517 | 24377 | 23111 | 20306 | 6947 | 4601 | 4381 | 3214 | 2619 | 2951 | 7420 | 19591 | 25411 | 144930 | 180 | 174 |
| 2250854 | 96315 | 77873 | 68714 | 13289 | 0 | 0 | 0 | 0 | 0 | 7029 | 62202 | 82954 | 412376 | 784 | 758 |
| 2026784 | 9268 | 7300 | 7502 | 3825 | 2176 | 1221 | 548 | 559 | 596 | 3259 | 7166 | 9445 | 52864 | 72 | 70 |
| 2024683 | 22720 | 21601 | 22134 | 7913 | 2993 | 1864 | 1668 | 1711 | 1749 | 6611 | 19757 | 24758 | 135478 | 291 | 281 |
| 2188212 | 20958 | 17658 | 13738 | 3649 | 280 | 0 | 0 | 0 | 0 | 1324 | 17022 | 19630 | 94259 | 302 | 292 |
| 2250864 | 15595 | 11706 | 7955 | 687 | 0 | 0 | 0 | 0 | 0 | 0 | 7548 | 12834 | 56324 | 591 | 572 |
| 2239839 | 28821 | 22292 | 22504 | 4964 | 0 | 0 | 0 | 10 | 0 | 41 | 20433 | 24904 | 123971 | 120 | 116 |
| 2284988 | 1245901 | 1256555 | 1287730 | 1378960 | 1376131 | 1227826 | 1324217 | 1271481 | 1091776 | 1150794 | 1243733 | 1465372 | 15320474 | 4200000 | 4061896 |
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| 2239841 | 67565 | 55034 | 56094 | 44796 | 39818 | 35980 | 31001 | 35582 | 36793 | 42115 | 54334 | 61060 | 560173 | 1043 | 1009 |
| 1986382 | 45406 | 38325 | 39735 | 9409 | 0 | 0 | 0 | 0 | 0 | 4384 | 27992 | 37182 | 202434 | 547 | 529 |
| 2027433 | 8003 | 6415 | 5861 | 1758 | 720 | 1846 | 4233 | 3413 | 2213 | 1481 | 5413 | 6622 | 47979 | 144 | 139 |
| 2027434 | 7245 | 5810 | 5267 | 1753 | 2084 | 2970 | 3818 | 3438 | 1947 | 1204 | 4730 | 5858 | 46124 | 144 | 139 |
| 1685277 | 33568 | 28477 | 20145 | 1170 | 0 | 10 | 0 | 0 | 0 | 0 | 17924 | 21796 | 123090 | 417 | 403 |
| 2239838 | 20670 | 17223 | 16434 | 7515 | 5593 | 4824 | 4162 | 4475 | 4684 | 5993 | 14827 | 18615 | 125016 | 313 | 303 |
| 2250857 | 58229 | 45621 | 43235 | 18036 | 6272 | 5096 | 0 | 9787 | 5180 | 13775 | 37039 | 46412 | 288681 | 479 | 463 |
| 2023948 | 21698 | 18793 | 18481 | 8642 | 2451 | 2179 | 2080 | 2081 | 2149 | 6534 | 15414 | 18199 | 118702 | 360 | 348 |
| 2024714 | 12430 | 10790 | 8407 | 1404 | 19 | 13 | 6 | 28 | 50 | 996 | 7008 | 9957 | 51110 | 167 | 162 |
| 2064820 | 3833 | 3149 | 2703 | 198 | 3 | 0 | 0 | 0 | 4 | 492 | 2528 | 3471 | 16381 | 58 | 56 |
| 2157702 | 45226 | 37139 | 35008 | 29752 | 29766 | 25255 | 24145 | 21263 | 24456 | 28778 | 37318 | 40363 | 378470 | 43 | 42 |
| 2027583 | 37000 | 33339 | 35939 | 34383 | 34545 | 32505 | 36751 | 35494 | 35431 | 37010 | 34983 | 35003 | 422384 | 725 | 701 |
| 2036187 | 46318 | 36235 | 30979 | 13153 | 7573 | 1310 | 0 | 0 | 249 | 10711 | 28291 | 38061 | 212881 | 725 | 701 |
| 2116162 | 184874 | 162044 | 161427 | 123506 | 106392 | 90183 | 97680 | 87341 | 88847 | 98298 | 137276 | 155180 | 1494048 | 2549 | 2465 |
| 1909300 | 252314 | 117599 | 100402 | 89445 | 150255 | 26740 | 19807 | 48993 | 3913 | 7245 | 143012 | 227831 | 1187556 | 0 | 0 |
| 1685275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 226 | 219 |
| 2027494 | 23695 | 20262 | 18595 | 4654 | 0 | 0 | 0 | 0 | 6 | 3482 | 20459 | 20723 | 111876 | 100 | 97 |
| 2123463 | 5471 | 4134 | 3583 | 2490 | 1874 | 1731 | 1610 | 1746 | 1873 | 2295 | 3255 | 4440 | 34504 | 119 | 115 |
| 2123484 | 5049 | 3838 | 3294 | 2259 | 1708 | 1567 | 1497 | 1622 | 1724 | 2095 | 2993 | 4081 | 31728 | 119 | 115 |
| 2123467 | 6784 | 5678 | 5643 | 2136 | 677 | 557 | 537 | 574 | 670 | 1441 | 5668 | 6708 | 37074 | 80 | 77 |
| 2115593 | 19030 | 15357 | 14805 | 9921 | 9189 | 7876 | 5771 | 7641 | 7621 | 9610 | 12254 | 14553 | 133628 | 388 | 376 |
| 2290193 | 15658 | 11271 | 10520 | 798 | 0 | 0 | 0 | 0 | 0 | 0 | 4979 | 10429 | 53656 | 383 | 370 |
| 2211334 | 18470 | 17017 | 17907 | 10452 | 6698 | 2016 | 2169 | 2237 | 5840 | 38114 | 20288 | 32598 | 173808 | 449 | 434 |
| 2025146 | 7136 | 5740 | 4915 | 926 | 0 | 0 | 0 | 0 | 1 | 392 | 4920 | 5337 | 29368 | 270 | 261 |
| 2025172 | 6641 | 5371 | 4625 | 837 | 0 | 0 | 0 | 0 | 1 | 360 | 4592 | 4933 | 27361 | 208 | 201 |
| 2027443 | 22253 | 18164 | 15399 | 6107 | 3566 | 2862 | 2707 | 2754 | 2769 | 4576 | 14962 | 18793 | 114913 | 180 | 174 |
| 1526478 | 49503 | 30069 | 25924 | 2103 | 0 | 0 | 0 | 0 | 0 | 441 | 24570 | 28657 | 161268 | 617 | 597 |
| 2027160 | 9102 | 8250 | 7977 | 1950 | 0 | 0 | 0 | 0 | 0 | 1345 | 6111 | 6830 | 41565 | 75 | 73 |
| 2024698 | 9699 | 7903 | 7174 | 2137 | 649 | 25 | 0 | 3 | 58 | 2260 | 6277 | 7189 | 43373 | 272 | 263 |
| 2250858 | 14778 | 12268 | 10458 | 2388 | 10 | 0 | 0 | 0 | 0 | 2326 | 10154 | 13136 | 65519 | 272 | 263 |
| 2157683 | 53384 | 48205 | 50103 | 42882 | 40999 | 39374 | 38956 | 43030 | 41670 | 45676 | 37972 | 49188 | 531438 | 1465 | 1417 |

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

- (9) A schedule depicting historic monthly end-user transportation through-put by customer. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423 (relating to orders to limit availability of proprietary information).

Response:

Please see the schedule attached to the response to 53.64(c)(8), Tab #7, which also provides the monthly end-user transportation through-put by customer.

Philadelphia Gas Works

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- (10) A schematic system map, locating and identifying by name, the pressure and capacity of all interstate or intrastate transmission pipeline connections, compressor stations, utility transmission or distribution mains 6 inches or larger in size, storage facilities, including maximum daily injection and withdrawal rates, production fields, and each individual supply or transportation customer which represents 5% or more of total system throughput in a month. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423.

Response:

Following the lead of the industry, as well as federal policy guidelines regarding the security of information relating to energy transmission sites, PGW will no longer provide this data to the general public. However, upon request PGW will provide this information to the Commission and will also provide access to this information at a PGW facility of the Company's choosing, upon written request, to parties to this proceeding that have legitimate business reasons to view this information.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
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(11) If any rate structure or rate allocation changes are to be proposed, a detailed explanation of each proposal, reasons therefore, number of customers affected, net effect on each customer class, and how the change relates to or is justified by changes in gas costs proposed in the Section 1307(f) tariff filing. Explain how gas supply, transportation and storage capacity costs are allocated to customers which are primarily nonheating, interruptible or transportation customers.

Response:

PGW is not proposing any rate structure or rate allocation changes in the instant proceeding, therefore, no testimony or schedules have been provided in this pre-filing to support such changes.

PGW will provide testimony regarding gas procurement policies, strategies and the GCR calculation in its 1307f March 1 filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
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Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(12) A schedule depicting the most recent 5-year consecutive 3-day peak data by customer class (or other historic peak day data used for system planning), daily volumetric throughput by customer class (including end-user transportation throughput), gas interruptions and high, low and average temperature during each day.

Response:

Schedule 1 – Three-day peak for FY 14-15 through FY 18-19.

There were not any gas interruptions during the period of FY 14-15 through FY 18-19.

3 DAY PEAK ANALYSIS

| Winter Peak Season | Date | Average Temp. | Hi Temp. | Low Temp. | Total Sendout (mcfs) | Firm Sendout | Cogen Sendout | LBS Sendout | BPS Sendout | GTS Sendout | IT Sendout |
|-----------------------|--------|------------------|-------------|--------------|-------------------------|-----------------|------------------|----------------|----------------|----------------|---------------|
| 2014 - 2015 | Feb 15 | 11 | 17 | 4 | 645,370 | 563,253 | 0 | 0 | 0 | 4,018 | 78,099 |
| 2014 - 2015 | Feb 16 | 16 | 21 | 9 | 617,947 | 527,584 | 0 | 0 | 0 | 3,957 | 86,406 |
| 2014 - 2015 | Feb 17 | 24 | 30 | 19 | 532,242 | 452,250 | 0 | 0 | 0 | 3,751 | 76,241 |
| 2015 - 2016 | Feb 12 | 26 | 30 | 22 | 490,537 | 407,974 | 43 | 0 | 0 | 3,984 | 78,536 |
| 2015 - 2016 | Feb 13 | 16 | 24 | 9 | 583,377 | 498,793 | 43 | 0 | 0 | 3,870 | 80,671 |
| 2015 - 2016 | Feb 14 | 18 | 24 | 11 | 562,929 | 489,468 | 43 | 0 | 0 | 3,653 | 69,765 |
| 2016-2017 | Jan 7 | 21 | 25 | 17 | 496,220 | 432,581 | 11 | 0 | 0 | 3,905 | 59,723 |
| 2016 - 2017 | Jan 8 | 21 | 27 | 18 | 528,423 | 461,794 | 11 | 0 | 0 | 3,791 | 62,827 |
| 2016-2017 | Jan 9 | 24 | 31 | 19 | 519,336 | 449,862 | 11 | 0 | 0 | 3,709 | 65,754 |
| 2017-2018 | Jan 5 | 15 | 19 | 10 | 625,642 | 547,239 | 44 | 0 | 0 | 0 | 78,359 |
| 2017 - 2018 | Jan 6 | 13 | 16 | 8 | 639,043 | 565,130 | 44 | 0 | 0 | 0 | 73,869 |
| 2017-2018 | Jan 7 | 20 | 27 | 9 | 582,222 | 516,455 | 44 | 0 | 0 | 0 | 65,723 |
| 2018 - 2019 | Jan 30 | 16 | 37 | 7 | 584,172 | 538,539 | 42 | 0 | 0 | 0 | 45,591 |
| 2018 - 2019 | Jan 31 | 17 | 20 | 11 | 609,241 | 557,084 | 42 | 0 | 0 | 0 | 52,115 |
| 2018 - 2019 | Feb 1 | 18 | 25 | 15 | 586,904 | 526,274 | 42 | 0 | 0 | 0 | 60,588 |

Philadelphia Gas Works

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(13) Identification and support for any peak day methodology used to project future gas demands and studies supporting the validity of the methodology.

Response: Please see the attached Peak Day analysis. Also attached is PGW's Peak Day Regression Model Review from Siemens that supports the validity of its peak day methodology.

Peak Day Analysis

PGW performs a peak day analysis on an annual basis to determine its projected sendout requirements during peak conditions. Essentially this process is completed by collecting sendout and average temperature data for all days where the temperature is at or below 32 degrees Fahrenheit, excluding holidays and weekends. All interruptible transportation volumes are removed from total sendout to arrive at firm sendout on a daily basis.

Common statistical practices warrant that no less than thirty (30) data points be utilized in the analysis to ensure its integrity. For this analysis, PGW has utilized data from the period winter of FY 16-17 through FY 18-19 which would reflect the most current consumption behaviors of its customers. This period yielded 51 data points where the average temperature was at or below 32 degrees Fahrenheit.

Degree days are calculated by subtracting the average daily temperature from sixty-five (65).

A standard linear regression was performed on the data using the calculated degree-days and the actual firm daily sendout information. Additionally, in order to confirm the accuracy of the analysis, and to smooth the charting of the data, a quadratic and a cubic regression analysis were also completed.

A resulting R^2 (Correlation Coefficient) indicates a 75.4 % correlation between firm sendout and degree-days. The multiple regression correlation co-efficient, R^2 , is a measure of the proportion of variability explained by, or due to the regression (linear relationship) in a sample of paired data. It is a number between zero and one and a value close to zero suggests a poor model.

To verify the level of confidence we can ascribe to the model, we developed the attached Linear Regression Confidence Level Table. Essentially, this table compares the actual versus projected sendout to determine the level of variance expressed as a standard deviation. A standard deviation represents the positive square root of the variance where the variance simply represents the dispersion about the mean. In this analysis the sample standard deviation is 34,333 MCF.

The sample loses one degree of freedom for each estimated parameter. Thus, with a sample of 100 paired values and two estimated parameters (one for the constant and one for the coefficient of "degree days"), there are $100-2=98$ degrees of freedom. In this analysis we had 51 data points and there were 49 Degrees of Freedom.

Finally, based upon the models developed, it can be determined that the company's projected peak day sendout should be set at 695,932 MCF per day at 0 degree Fahrenheit. This calculation is performed using the X Coefficient (i.e. slope) multiplied by the number of degree days and adding the Constant (Y Intercept).

Winter 16-19 Data for Daily Temperatures <= 32 Degrees Fahrenheit
W/O Holidays, Weekends

| Day | Date | Daily Temp | Degree Days X | X^2 | X^3 | Actual Firm Sendout (Mcf) | Firm Sendout Per DD (Mcf) | Linear Projected Firm Sendout (Mcf) | Quadratic Projected Firm Sendout (Mcf) | Cubic Projected Firm Sendout (Mcf) |
|-----------|------------|------------|---------------|-------|---------|---------------------------|---------------------------|-------------------------------------|--|------------------------------------|
| Monday | 1/4/2016 | 21 | 44 | 1,936 | 85,184 | 407,940 | 9,271 | 464,493 | 464,474 | 463,726 |
| Tuesday | 1/5/2016 | 27 | 38 | 1,444 | 54,872 | 398,646 | 10,491 | 398,367 | 398,332 | 398,656 |
| Monday | 1/11/2016 | 31 | 34 | 1,156 | 39,304 | 334,881 | 9,849 | 354,284 | 354,303 | 354,317 |
| Wednesday | 1/13/2016 | 28 | 37 | 1,369 | 50,653 | 379,941 | 10,269 | 387,346 | 387,320 | 387,736 |
| Tuesday | 1/19/2016 | 26 | 39 | 1,521 | 59,319 | 430,686 | 11,043 | 409,388 | 409,348 | 409,512 |
| Thursday | 1/21/2016 | 31 | 34 | 1,156 | 39,304 | 361,668 | 10,637 | 354,284 | 354,303 | 354,317 |
| Friday | 1/22/2016 | 27 | 38 | 1,444 | 54,872 | 397,773 | 10,468 | 398,367 | 398,332 | 398,656 |
| Wednesday | 2/10/2016 | 31 | 34 | 1,156 | 39,304 | 355,015 | 10,442 | 354,284 | 354,303 | 354,317 |
| Thursday | 2/11/2016 | 24 | 41 | 1,681 | 68,921 | 435,736 | 10,628 | 431,430 | 431,389 | 431,131 |
| Friday | 2/12/2016 | 26 | 39 | 1,521 | 59,319 | 419,340 | 10,752 | 409,388 | 409,348 | 409,512 |
| Thursday | 2/18/2016 | 32 | 33 | 1,089 | 35,937 | 345,555 | 10,471 | 343,263 | 343,304 | 342,872 |
| Thursday | 12/15/2016 | 21 | 44 | 1,936 | 85,184 | 442,443 | 10,056 | 464,493 | 464,474 | 463,726 |
| Friday | 12/16/2016 | 28 | 37 | 1,369 | 50,653 | 398,274 | 10,764 | 387,346 | 387,320 | 387,736 |
| Monday | 12/19/2016 | 28 | 37 | 1,369 | 50,653 | 360,577 | 9,745 | 387,346 | 387,320 | 387,736 |
| Friday | 1/6/2017 | 29 | 36 | 1,296 | 46,656 | 352,566 | 9,794 | 376,325 | 376,311 | 376,723 |
| Monday | 1/9/2017 | 24 | 41 | 1,681 | 68,921 | 449,790 | 10,970 | 431,430 | 431,389 | 431,131 |
| Friday | 2/3/2017 | 30 | 35 | 1,225 | 42,875 | 355,990 | 10,171 | 365,304 | 365,305 | 365,592 |
| Thursday | 2/9/2017 | 27 | 38 | 1,444 | 54,872 | 369,581 | 9,726 | 398,367 | 398,332 | 398,656 |
| Friday | 3/10/2017 | 30 | 35 | 1,225 | 42,875 | 320,645 | 9,161 | 365,304 | 365,305 | 365,592 |
| Tuesday | 3/14/2017 | 28 | 37 | 1,369 | 50,653 | 385,646 | 10,423 | 387,346 | 387,320 | 387,736 |
| Wednesday | 3/15/2017 | 28 | 37 | 1,369 | 50,653 | 407,450 | 11,012 | 387,346 | 387,320 | 387,736 |
| Wednesday | 12/13/2017 | 31 | 34 | 1,156 | 39,304 | 356,549 | 10,487 | 354,284 | 354,303 | 354,317 |
| Thursday | 12/14/2017 | 31 | 34 | 1,156 | 39,304 | 354,093 | 10,415 | 354,284 | 354,303 | 354,317 |
| Friday | 12/15/2017 | 28 | 37 | 1,369 | 50,653 | 375,049 | 10,136 | 387,346 | 387,320 | 387,736 |
| Tuesday | 12/26/2017 | 29 | 36 | 1,296 | 46,656 | 373,407 | 10,372 | 376,325 | 376,311 | 376,723 |
| Wednesday | 12/27/2017 | 23 | 42 | 1,764 | 74,088 | 436,899 | 10,402 | 442,451 | 442,414 | 441,948 |
| Thursday | 12/28/2017 | 19 | 46 | 2,116 | 97,336 | 475,927 | 10,346 | 486,535 | 486,548 | 485,872 |
| Friday | 12/29/2017 | 22 | 43 | 1,849 | 79,507 | 451,955 | 10,511 | 453,472 | 453,442 | 452,804 |
| Tuesday | 1/2/2018 | 23 | 42 | 1,764 | 74,088 | 481,485 | 11,464 | 442,451 | 442,414 | 441,948 |
| Wednesday | 1/3/2018 | 28 | 37 | 1,369 | 50,653 | 412,195 | 11,140 | 387,346 | 387,320 | 387,736 |
| Thursday | 1/4/2018 | 21 | 44 | 1,936 | 85,184 | 490,882 | 11,156 | 464,493 | 464,474 | 463,726 |
| Friday | 1/5/2018 | 15 | 50 | 2,500 | 125,000 | 544,956 | 10,899 | 530,618 | 530,733 | 532,110 |
| Monday | 1/15/2018 | 31 | 34 | 1,156 | 39,304 | 394,810 | 11,612 | 354,284 | 354,303 | 354,317 |
| Wednesday | 1/17/2018 | 26 | 39 | 1,521 | 59,319 | 411,626 | 10,555 | 409,388 | 409,348 | 409,512 |
| Thursday | 1/18/2018 | 32 | 33 | 1,089 | 35,937 | 379,044 | 11,486 | 343,263 | 343,304 | 342,872 |
| Tuesday | 1/30/2018 | 30 | 35 | 1,225 | 42,875 | 383,370 | 10,953 | 365,304 | 365,305 | 365,592 |
| Wednesday | 1/31/2018 | 32 | 33 | 1,089 | 35,937 | 358,262 | 10,856 | 343,263 | 343,304 | 342,872 |
| Friday | 2/2/2018 | 25 | 40 | 1,600 | 64,000 | 418,656 | 10,466 | 420,409 | 420,367 | 420,328 |
| Monday | 2/5/2018 | 32 | 33 | 1,089 | 35,937 | 344,431 | 10,437 | 343,263 | 343,304 | 342,872 |
| Thursday | 2/8/2018 | 31 | 34 | 1,156 | 39,304 | 354,509 | 10,427 | 354,284 | 354,303 | 354,317 |
| Thursday | 12/20/2018 | 32 | 33 | 1,089 | 35,937 | 201,788 | 6,115 | 343,263 | 343,304 | 342,872 |
| Friday | 1/11/2019 | 30 | 35 | 1,225 | 42,875 | 373,059 | 10,659 | 365,304 | 365,305 | 365,592 |
| Monday | 1/14/2019 | 32 | 33 | 1,089 | 35,937 | 359,888 | 10,906 | 343,263 | 343,304 | 342,872 |
| Tuesday | 1/22/2019 | 32 | 33 | 1,089 | 35,937 | 411,860 | 12,481 | 343,263 | 343,304 | 342,872 |
| Monday | 1/28/2019 | 31 | 34 | 1,156 | 39,304 | 359,583 | 10,576 | 354,284 | 354,303 | 354,317 |
| Wednesday | 1/30/2019 | 16 | 49 | 2,401 | 117,649 | 500,210 | 10,208 | 519,598 | 519,682 | 520,242 |
| Thursday | 1/31/2019 | 17 | 48 | 2,304 | 110,592 | 522,949 | 10,895 | 508,577 | 508,634 | 508,597 |
| Friday | 2/1/2019 | 18 | 47 | 2,209 | 103,823 | 503,750 | 10,718 | 497,556 | 497,589 | 497,149 |
| Monday | 3/4/2019 | 32 | 33 | 1,089 | 35,937 | 344,300 | 10,433 | 343,263 | 343,304 | 342,872 |
| Tuesday | 3/5/2019 | 28 | 37 | 1,369 | 50,653 | 374,021 | 10,109 | 387,346 | 387,320 | 387,736 |
| Wednesday | 3/6/2019 | 26 | 39 | 1,521 | 59,319 | 424,011 | 10,872 | 409,388 | 409,348 | 409,512 |

65
Count 4,225 274,625 397,719 10,475 695,932 696,895 754,796

**Firm Sendout Projection Based Data From 16-19
Data for Daily Temperatures <= 32 Degrees Fahrenheit**

| <u>R Squared</u> | <u>Change</u> | <u>Student's T</u> | <u>Degrees of Freedom</u> | <u>Critical Value</u> | <u>@ 97.5% Significant</u> |
|--|---------------|--------------------|---------------------------|-----------------------|----------------------------|
| 0.754401 | 0.754401 | 12.268358 | 49 | 1.99 | Yes |
| 0.754402 | 0.000000 | 0.008709 | 48 | 1.98 | No |
| 0.754456 | 0.000054 | 0.102122 | 47 | 1.98 | No |
| | | | <u>49</u> | <u>48</u> | <u>47</u> |
| Degrees of Freedom | | | | <u>1.98</u> | <u>1.98</u> |
| 97.5% Significance Level | | | | <u>1.66</u> | <u>1.66</u> |
| 95.0% Significance Level | | | | | |
| <u>Linear Projection at Zero Degrees Fahrenheit</u> | 695,932 | Mcf | | | |
| <u>Linear Projection at 15 Degrees Fahrenheit</u> | 530,618 | Mcf | | | |

*Student's T = Square Root[(Increase * Degrees of Freedom)/(1 - R Squared)]*

*Linear SO = Constant + (X * X Coefficient)*

*Quadratic SO = Constant + (X * X Coeff) + (X1u2 * X1u2 Coeff)*

*Cubic SO = Constant + (X * X Coeff) + (X1u2 * X1u2 Coeff) + (X1u3 * X1u3 Coeff)*

Linear Regression Confidence Level Table

| Count | Degree Days | Firm Sendout (Mcf) | Projected Firm Sendout (Mcf) | Difference Actual Versus Projected | Actual Versus Projected Squared (Y - Yc) ² | (Degree Days - Xm) | (Degree Days - Xm) ² | sdvc | t*sdc | Lower Acc | | Upper Acc | | "- 1 SD" | | "+ 1 SD" | | "- 2 SD" | | "+ 2 SD" | |
|-------|-------------|--------------------|------------------------------|------------------------------------|---|--------------------|---------------------------------|--------|--------|-----------|-------------|-----------|-----------|----------|-----------|----------|------------|----------|------------|----------|--|
| | | | | | | | | | | Lower | Ydc + t*sdc | Upper | Ydc + sdc | Lower | Ydc + sdc | Lower | Ydc + 2sdc | Lower | Ydc + 2sdc | | |
| 1 | 33 | 345,555 | 343,263 | 2,293 | 5,255,831 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 2 | 33 | 379,044 | 343,263 | 35,781 | 1,280,306,644 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 3 | 33 | 358,262 | 343,263 | 14,999 | 224,983,764 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 4 | 33 | 344,431 | 343,263 | 1,169 | 1,365,394 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 5 | 33 | 201,788 | 343,263 | (141,475) | 20,015,136,673 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 6 | 33 | 359,888 | 343,263 | 16,626 | 276,416,815 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 7 | 33 | 411,860 | 343,263 | 68,598 | 4,705,656,472 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 8 | 33 | 344,300 | 343,263 | 1,037 | 1,076,132 | (5) | 24 | 9,836 | 19,586 | 323,676 | 362,849 | 317,480 | 369,046 | 291,697 | 394,829 | | | | | | |
| 9 | 34 | 334,881 | 354,284 | (19,403) | 376,469,108 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 10 | 34 | 361,668 | 354,284 | 7,384 | 54,524,084 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 11 | 34 | 355,015 | 354,284 | 731 | 534,414 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 12 | 34 | 356,549 | 354,284 | 2,265 | 5,132,404 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 13 | 34 | 354,093 | 354,284 | (190) | 36,267 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 14 | 34 | 394,810 | 354,284 | 40,527 | 1,642,419,269 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 15 | 34 | 354,509 | 354,284 | 225 | 50,817 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 16 | 34 | 359,583 | 354,284 | 5,300 | 28,088,444 | (4) | 16 | 8,342 | 16,612 | 337,672 | 370,895 | 328,501 | 380,066 | 302,718 | 405,849 | | | | | | |
| 17 | 35 | 355,990 | 365,304 | (9,315) | 86,760,271 | (3) | 9 | 6,968 | 13,875 | 351,429 | 379,180 | 339,521 | 391,087 | 313,739 | 416,870 | | | | | | |
| 18 | 35 | 320,645 | 365,304 | (44,660) | 1,994,494,687 | (3) | 9 | 6,968 | 13,875 | 351,429 | 379,180 | 339,521 | 391,087 | 313,739 | 416,870 | | | | | | |
| 19 | 35 | 383,370 | 365,304 | 18,066 | 326,373,502 | (3) | 9 | 6,968 | 13,875 | 351,429 | 379,180 | 339,521 | 391,087 | 313,739 | 416,870 | | | | | | |
| 20 | 35 | 373,059 | 365,304 | 7,755 | 60,138,766 | (3) | 9 | 6,968 | 13,875 | 351,429 | 379,180 | 339,521 | 391,087 | 313,739 | 416,870 | | | | | | |
| 21 | 36 | 352,566 | 376,325 | (23,759) | 564,500,880 | (2) | 4 | 5,799 | 11,547 | 364,778 | 387,873 | 350,542 | 402,108 | 324,759 | 427,891 | | | | | | |
| 22 | 36 | 373,407 | 376,325 | (2,918) | 8,516,248 | (2) | 4 | 5,799 | 11,547 | 364,778 | 387,873 | 350,542 | 402,108 | 324,759 | 427,891 | | | | | | |
| 23 | 37 | 379,941 | 387,346 | (7,405) | 54,838,676 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 24 | 37 | 398,274 | 387,346 | 10,928 | 119,418,806 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 25 | 37 | 360,577 | 387,346 | (26,769) | 716,576,231 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 26 | 37 | 385,646 | 387,346 | (1,701) | 2,892,675 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 27 | 37 | 407,450 | 387,346 | 20,104 | 404,156,211 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 28 | 37 | 375,049 | 387,346 | (12,298) | 151,232,532 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 29 | 37 | 412,195 | 387,346 | 24,849 | 617,464,572 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 30 | 37 | 374,021 | 387,346 | (13,325) | 177,565,487 | (1) | 1 | 4,981 | 9,920 | 377,427 | 397,266 | 361,563 | 413,129 | 335,780 | 438,912 | | | | | | |
| 31 | 38 | 398,646 | 398,367 | 279 | 77,652 | 0 | 0 | 4,703 | 9,365 | 389,002 | 407,732 | 372,584 | 424,150 | 346,801 | 449,933 | | | | | | |
| 32 | 38 | 397,773 | 398,367 | (595) | 353,567 | 0 | 0 | 4,703 | 9,365 | 389,002 | 407,732 | 372,584 | 424,150 | 346,801 | 449,933 | | | | | | |
| 33 | 38 | 369,581 | 398,367 | (28,786) | 828,625,180 | 0 | 0 | 4,703 | 9,365 | 389,002 | 407,732 | 372,584 | 424,150 | 346,801 | 449,933 | | | | | | |
| 34 | 39 | 430,686 | 409,388 | 21,297 | 453,575,862 | 1 | 1 | 5,053 | 10,062 | 399,326 | 419,451 | 383,605 | 435,171 | 357,822 | 460,954 | | | | | | |
| 35 | 39 | 419,340 | 409,388 | 9,952 | 99,039,320 | 1 | 1 | 5,053 | 10,062 | 399,326 | 419,451 | 383,605 | 435,171 | 357,822 | 460,954 | | | | | | |
| 36 | 39 | 411,626 | 409,388 | 2,238 | 5,007,127 | 1 | 1 | 5,053 | 10,062 | 399,326 | 419,451 | 383,605 | 435,171 | 357,822 | 460,954 | | | | | | |
| 37 | 39 | 424,011 | 409,388 | 14,623 | 213,825,142 | 1 | 1 | 5,053 | 10,062 | 399,326 | 419,451 | 383,605 | 435,171 | 357,822 | 460,954 | | | | | | |
| 38 | 40 | 418,656 | 420,409 | (1,753) | 3,072,158 | 2 | 4 | 5,922 | 11,792 | 408,617 | 432,201 | 394,626 | 446,192 | 368,843 | 471,975 | | | | | | |
| 39 | 41 | 435,736 | 431,430 | 4,306 | 18,542,007 | 3 | 9 | 7,121 | 14,180 | 417,250 | 445,610 | 405,647 | 457,213 | 379,864 | 482,996 | | | | | | |
| 40 | 41 | 449,790 | 431,430 | 18,360 | 337,078,568 | 3 | 9 | 7,121 | 14,180 | 417,250 | 445,610 | 405,647 | 457,213 | 379,864 | 482,996 | | | | | | |
| 41 | 42 | 436,899 | 442,451 | (5,552) | 30,820,447 | 4 | 16 | 8,513 | 16,952 | 425,499 | 459,403 | 416,668 | 468,234 | 390,885 | 494,017 | | | | | | |
| 42 | 42 | 481,485 | 442,451 | 39,034 | 1,523,636,245 | 4 | 16 | 8,513 | 16,952 | 425,499 | 459,403 | 416,668 | 468,234 | 390,885 | 494,017 | | | | | | |
| 43 | 43 | 451,955 | 453,472 | (1,517) | 2,302,138 | 5 | 26 | 10,017 | 19,947 | 433,525 | 473,419 | 427,689 | 479,255 | 401,906 | 505,038 | | | | | | |
| 44 | 44 | 407,940 | 464,493 | (56,553) | 3,198,241,996 | 6 | 37 | 11,590 | 23,079 | 441,414 | 487,572 | 438,710 | 490,276 | 412,927 | 516,059 | | | | | | |
| 45 | 44 | 442,443 | 464,493 | (22,050) | 486,209,493 | 6 | 37 | 11,590 | 23,079 | 441,414 | 487,572 | 438,710 | 490,276 | 412,927 | 516,059 | | | | | | |
| 46 | 44 | 490,882 | 464,493 | 26,389 | 696,399,288 | 6 | 37 | 11,590 | 23,079 | 441,414 | 487,572 | 438,710 | 490,276 | 412,927 | 516,059 | | | | | | |
| 47 | 46 | 475,927 | 486,535 | (10,607) | 112,513,554 | 8 | 65 | 14,854 | 29,579 | 456,956 | 516,114 | 460,752 | 512,318 | 434,969 | 538,101 | | | | | | |
| 48 | 47 | 503,750 | 497,556 | 6,194 | 38,365,830 | 9 | 82 | 16,522 | 32,900 | 464,656 | 530,456 | 471,773 | 523,339 | 445,990 | 549,122 | | | | | | |
| 49 | 48 | 522,949 | 508,577 | 14,373 | 206,576,553 | 10 | 101 | 18,205 | 36,251 | 472,325 | 544,828 | 482,794 | 534,360 | 457,011 | 560,143 | | | | | | |
| 50 | 49 | 500,210 | 519,598 | (19,387) | 375,862,096 | 11 | 122 | 19,899 | 39,625 | 479,973 | 559,223 | 493,815 | 545,380 | 468,032 | 571,163 | | | | | | |
| 51 | 50 | 544,956 | 530,618 | 14,337 | 205,554,200 | 12 | 145 | 21,602 | 43,016 | 487,603 | 573,634 | 504,836 | 556,401 | 479,053 | 582,184 | | | | | | |

63 695,932 (695,932) 484,322,022,340 27 732 47,544 94,674 601,259 790,606 670,150 721,715 644,367 747,498

Tot/Avg 38 397,719 365,304 33,902,813,296 369

t = 1.99

Xm = 38
 Population Variance = 664,761,045

Population Standard Deviation of Regression = 25,783

| | | |
|----|-------------|-------------|
| 1s | Upper Range | Lower Range |
| 2s | 423,502 | 371,936 |
| | 449,285 | 346,153 |

Standard error of sendout projection 33,578
 T-factor 1.99
 (T factor) * (Std error of projection) 66,864

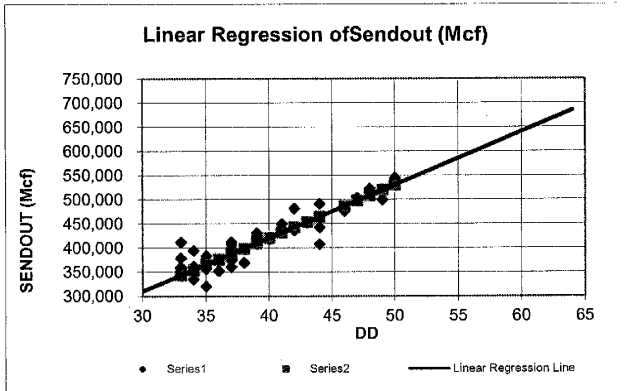
Regression Results

Winter 16-19

Based On Data for Daily Temperatures <= 32 Degrees Fahrenheit

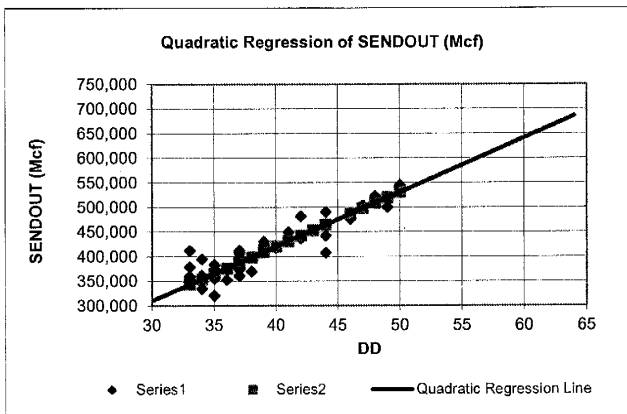
| Regression Output: | | Quadratic | | | Cubic | | | |
|---------------------------|----------|---------------------|------------|---------------------|--------------------|----------------|----------------|----|
| Regression Output: | | Regression Output: | | | Regression Output: | | | |
| Constant | (20,428) | Constant | (17,841) | Constant | (302,370) | | | |
| Std Err of Y Est | 34,333 | Std Err of Y Est | 299,101 | Std Err of Y Est | 2,802,497 | | | |
| R Squared | 0.7544 | R Squared | 1 | R Squared | 1 | | | |
| No. of Observations | 51 | No. of Observations | 51 | No. of Observations | 51 | | | |
| Degrees of Freedom | 49 | Degrees of Freedom | 48 | Degrees of Freedom | 47 | | | |
| | | | X | X ² | X | X ² | X ³ | |
| X Coefficient(s) | 11,021 | X Coefficient(s) | 10889.9937 | 2 | X Coefficient(s) | 32,332 | (532) | 4 |
| Std Err of Coef. | 898 | Std Err of Coef. | 15063.0560 | 187 | Std Err of Coef. | 210,518 | 5,226 | 43 |
| Zero Degree Temp Sendout | 695,932 | | | 696,895 | | | 754,796 | |
| DD | 65 | | | | | | | |

Regression Chart Analysis
Based Upon Data For Temperatures Of <=32 Degrees F.
Winters 16-19



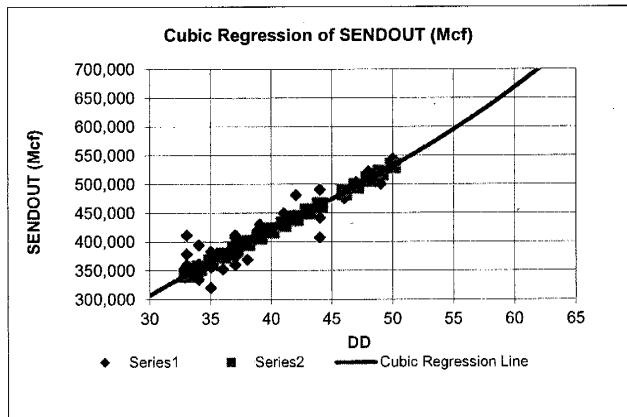
Linear Regression Output

| | |
|--------------------------|----------|
| Constant | (20,428) |
| Std. Error of Y Estimate | 34,333 |
| R Squared | 0.754 |
| Number of Observations | 51 |
| Degrees of Freedom | 49 |
| X Coefficient | 11021 |
| Std. Err. Of Coefficeint | 898 |



Quadratic Regression Output

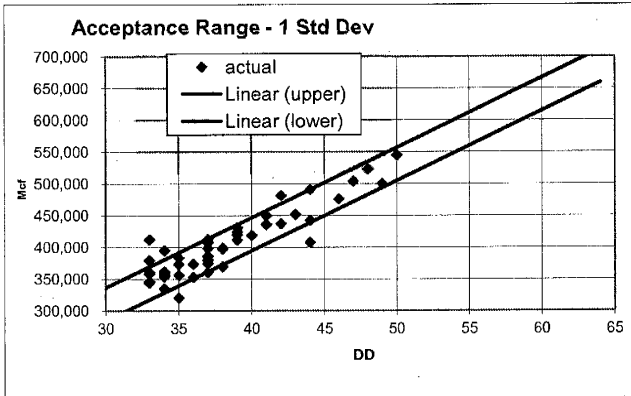
| | |
|----------------------------|----------|
| Constant | (17,841) |
| Std. Error of Y Estimate | 299,101 |
| R Squared | 0.754 |
| Number of Observations | 51 |
| Degrees of Freedom | 48 |
| X Coefficient | 10,890 |
| Std. Err. Of Coefficeint | 15,063 |
| X ² Coefficient | 2 |
| Std. Err. Of Coefficeint | 187 |



Cubic Regression Output

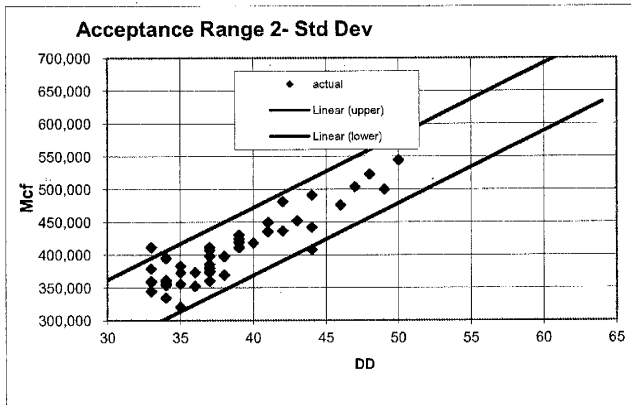
| | |
|----------------------------|-----------|
| Constant | (302,370) |
| Std. Error of Y Estimate | 2,802,497 |
| R Squared | 0.754 |
| Number of Observations | 51 |
| Degrees of Freedom | 47 |
| X Coefficient | 32332 |
| Std. Err. Of Coefficeint | 210518 |
| X ² Coefficient | (532) |
| Std. Err. Of Coefficeint | 5226 |
| X ³ Coefficient | 4 |
| Std. Err. Of Coefficeint | 43 |

Regression Chart Analysis
Based Upon Data For Temperatures Of <=32 Degrees F.
Winters 16-19



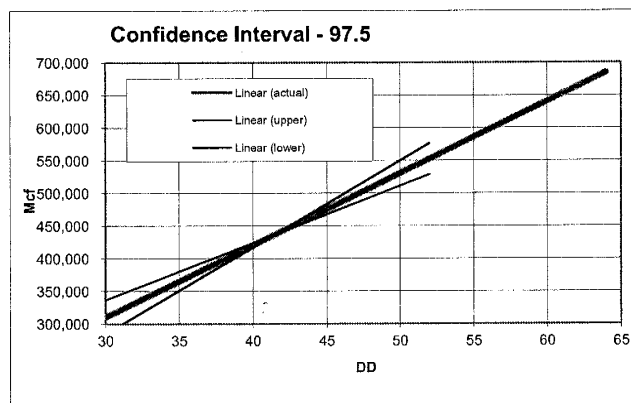
Acceptance Range @ 1 Standard Deviation

| | |
|--------------------|-------------|
| Regression Squared | 664,761,045 |
| Regression | 25,783 |
| Upper Range 1sd | 423,502 |
| Lower Range 1sd | 371,936 |



Acceptance Range @ 2 Standard Deviation

| | |
|--------------------|-------------|
| Regression Squared | 664,761,045 |
| Regression | 25,783 |
| Upper Range 2sd | 449,285 |
| Lower Range 2sd | 346,153 |



Confidence Interval: 97.5%

| | |
|--------------------------------------|-------------|
| Regression Squared | 664,761,045 |
| Standard error of sendout projection | 33,578 |
| X Mean | 38 |
| T Distribution | 1.99 |

MEMO TO: PHILADELPHIA GAS WORK (PGW)
FROM: Holt Bradshaw, Amit Gohil
DATE: 1/14/2019
SUBJECT: PGW'S PEAK DAY REGRESSION MODEL REVIEW

This memorandum describes Siemens' assessment of the PGWs peak day regression analysis, and an evaluation of the regression models developed by PGW.

Executive Summary

We carried out the evaluation of the three regression models provided by PGW in two steps – the first step was the preliminary (or intuitive) evaluation; and the second step was the more rigorous evaluation to test the statistical validity of the regression parameters and the overall model. We also carried out an independent regression analysis using MS Excel based on the weather and send out data provided by PGW and verified the completeness and accuracy of the regression parameters and the associated statistical results for each of the three regression models developed by PGW.

We also believe that the selection of the zero degree day condition for planning purposes is prudent given that the probability of the actual system send out exceeding the capacity as predicted by the zero degree day condition is extremely low (once in 80 years).

In our preliminary evaluation, we concluded that the Linear model confirms the intuitive positive relationship between severity of weather, as measured by HDDs, and natural gas demand. It also explains over 75% of the historical variability observed in peak send outs. Adding polynomials of higher orders to the liner model does not improve the "goodness of fit" as measured by Adjusted R². So, we conclude that the Linear model is preferred based on our preliminary evaluation.

Next, we conducted tests for statistical significance of the regression coefficients and the overall regression model. The Linear, Quadratic, and Cubic regression models that PGW developed are progressively nested. While comparing nested models, where an additional independent variable is added to the regression model, the t-test performs better than the overall F-test. The t-tests indicated that the regression coefficients of independent variables such as HDD² and HDD³ (see Table 1) in the Quadratic and Cubic models cannot be statistically claimed to be different from zero.

A good, parsimonious regression model is preferred over complicated models with multiple independent variables, especially when these variables do not add to the explanatory or predictive value of the model. In the light of the statistical tests, we recommend that PGW use the Linear regression model specified in Table 1.

In summary, after our evaluation of PGW’s regression models, we conclude that the Linear Model developed by PGW is fit for the purpose it is required to serve, which is to reliably predict the peak requirements that PGW’s system should be prepared to serve during a design winter scenario.

PGW’s Peak Day Analysis

PGW performs a peak day analysis on an annual basis to determine its projected send out requirements during peak conditions. Essentially this process is completed by collecting send out and average temperature data for all days where the temperature is at or below 32 degrees Fahrenheit, excluding holidays and weekends. All interruptible transportation volumes are removed from total send out to arrive at firm send out on a daily basis.

For this analysis, PGW utilized data from the period winter of FY 15-16 through FY 18-19 which would reflect the most current consumption behaviors of its customers. This period yielded 51 data points where the average temperature was at or below 32 degrees Fahrenheit. A standard linear regression was performed on the data using the calculated Heating Degree-Days (HDDs) and the actual firm daily send out information. Additionally, in order to confirm the accuracy of the analysis, and to smooth the charting of the data, a Quadratic and a Cubic regression analysis were also completed. The resulting models are presented in the following table.

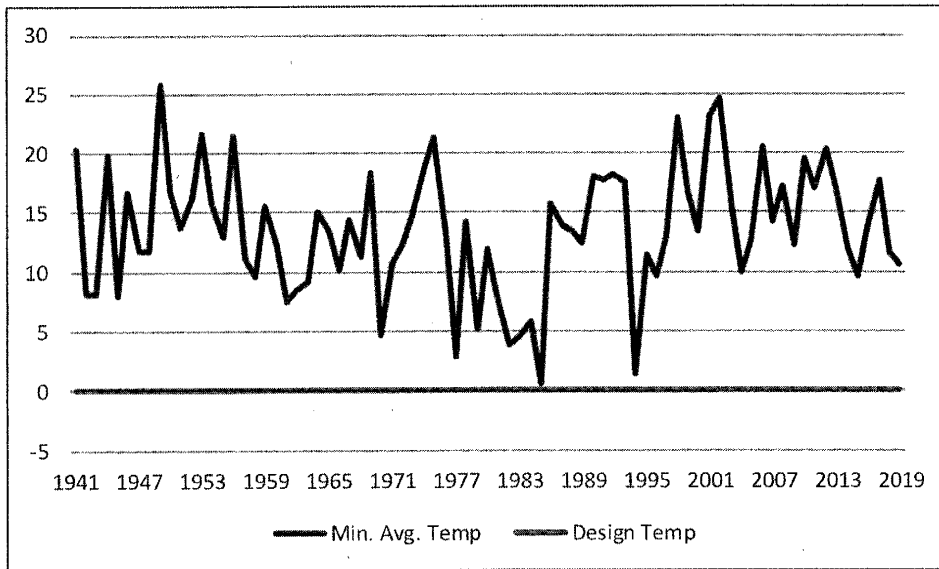
Table 1: PGW’s Regression Models

| | | |
|-----------|---|--|
| Linear | $y = -20,428.25 + 11,020.93 x$ | where y = actual firm send out in Mcf; $x = HDD$; $x^2 = HDD^2$; and $x^3 = HDD^3$ |
| Quadratic | $y = -17,841.06 + 10,889.99 x + 1.63 x^2$ | |
| Cubic | $y = -302,369.81 + 32,332.30 x - 531.69 x^2 + 4.38 x^3$ | |

Source: PGW

PGW performs its capacity planning using the “Design Day” methodology, which assumes that peak demand for planning purposes occurs on the day(s) when the average daily temperature is 0 degree Fahrenheit - this is equivalent to a winter day with 65 heating degree days (HDDs). As can be seen from Exhibit 1, the probability of meeting design day conditions remains approximately once in 80 years based on the data from National Oceanic and Atmospheric Administration (NOAA). This probability may even be lower given the historical data only consider data from the past 80 years. Selection of such a low probability event, to determine the largest amount of gas that PGW must deliver to meet system requirements and maintain system integrity, is prudent in our opinion.

Exhibit 1: Coldest Days in Philadelphia By Year



Source: National Climatic Data Center (NCDC), National Oceanic and Atmospheric Administration (NOAA)

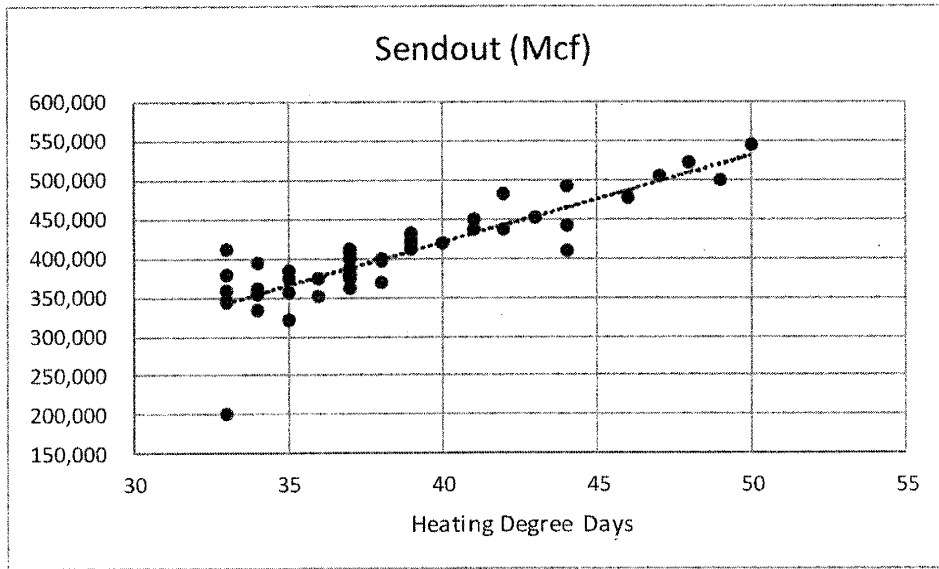
In the following sections, we review the underlying methodology of PGW's Linear, Quadratic, and Cubic models, evaluate their relative statistical significance and present our observations and recommendations.

We carry out the evaluation of the regression model in two steps – the first step is the preliminary (or sometimes referred to as intuitive) evaluation; and the second step is the more rigorous evaluation to test the statistical validity of the regression parameters and the overall model.

Preliminary Evaluation

In our preliminary evaluation, we are testing if the dependent variable can be intuitively explained by the independent variable(s) considered in the regression model(s). In the Peak Day Analysis, PGW's actual firm send out on the peak day is the explained (or dependent) variable, whereas the HDDs representing the number of degrees that a day's average temperature is below 65° Fahrenheit, which is the temperature below which buildings need to be heated, is the independent variable. The scatter plot presented in Exhibit 2 provides reasonable visual evidence of a linear relationship between the 2 variables. In addition to the linear relationship, PGW has considered a quadratic and cubic relationship between the firm send out and HDDs.

Exhibit 2: Scatter Plot



Source: PGW

In our preliminary evaluation, we also examine the Coefficient of Determination or commonly known as the R^2 . For the Quadratic and Cubic models, we use the R^2 adjusted for the number of terms in the model. The R^2 or the Adjusted R^2 measures the percentage of variation in the dependent variable that can be explained by the variation in the independent variables in the regression model. We also examine the magnitude and sign of each regression coefficient and the results are presented in the table below.

Table 2: Preliminary Evaluation Results

| Regression Model | % Variation Explained | Effect on Explained Variable |
|------------------|---|--|
| Linear | 75.44 % of variation in send out explained by <i>HDDs</i> | Send out positively affected by <i>HDD</i> |
| Quadratic | 74.41 % of variation in send out explained by a combination of <i>HDD</i> , and <i>HDD</i> ² variables | Send out positively affected by <i>HDD</i> and <i>HDD</i> ² variables |
| Cubic | 73.88 % of variation in send out explained by a combination of <i>HDD</i> , <i>HDD</i> ² , and <i>HDD</i> ³ variables | Send out positively affected by <i>HDD</i> , negatively affected by <i>HDD</i> ² , and positively affected by <i>HDD</i> ³ variables |

Source: PGW

As can be seen from Table 2, adding polynomials of higher orders to the regression equation does not improve the “goodness of fit” as measured by Adjusted R^2 . The Linear model confirms the intuitive positive relationship between severity of weather, as measured by HDDs, and

natural gas load. It also explains a large portion of the historical variability observed in peak send outs, so it is the preferred model based on our preliminary evaluation.

Next, we perform a more rigorous statistical evaluation of the 3 models.

Statistical Evaluation

Testing for Statistical Significance of Slope Coefficients

The second step in our evaluation is to test for statistical significance of the coefficients of the independent variables in the regression models. It should be noted that the regression analysis only provides point estimates of these regression coefficients, so it becomes important to statistically test how representative are these of the true coefficients. This is achieved by computing confidence intervals for the regression coefficients and conducting hypothesis testing using p-values.

Confidence Intervals

To determine whether the independent variable(s) truly have an effect on the explained variable, we find a confidence interval around the point estimates of each of the coefficients of the independent variables in the regression. If the confidence interval contains 0, then we have significant statistical evidence to believe that the independent variable in question has no effect on the dependent variable. The 97.5% confidence intervals displayed in Table 3 are calculated using:

$$(\text{point estimate}) \pm (t - \text{critical value}) \times (\text{standard error})$$

with n-k degrees of freedom, where k is the number of parameters that are being estimated (number of regression coefficients in this case).

Table 3: Confidence Intervals Surrounding the Regression Coefficients

| Model | HDD | | HDD ² | | HDD ³ | |
|-----------|----------------|----------------|------------------|----------------|------------------|----------------|
| | Lower Endpoint | Upper Endpoint | Lower Endpoint | Upper Endpoint | Lower Endpoint | Upper Endpoint |
| Linear | 8,943.68 | 13,098.19 | N/A | N/A | N/A | N/A |
| Quadratic | -23,964.40 | 45,744.39 | -431.44 | 434.70 | N/A | N/A |
| Cubic | -455,118.95 | 519,783.54 | -12,631.93 | 11,568.55 | -94.86 | 103.61 |

Source: PGW

As can be clearly seen from Table 3, with 97.5% confidence, we cannot rule out that the coefficients of the independent variables in the Quadratic and Cubic models will not assume a value of 0. In this instance, only the Linear model has a statistically significant coefficient which is not zero. We can be 97.5% confident, that using the Linear model a unit increase in HDD will lead to an increase in send out ranging between 8,944 and 13,098 Mcf.

Hypothesis Testing

In addition to the confidence intervals, we also use Hypothesis Testing to determine whether the independent variable(s) truly have an effect on the explained variable. If there is no relationship between these variables, the coefficients of the independent variables will be 0 and vice versa. In order to statistically test the relationship, we construct a hypothesis as follows:

Determine if there is overwhelming evidence at the 0.05 significance level ($\alpha = 0.05$) of a linear relationship between the peak day send out and the HDDs observed on that day (or HDD^2 or HDD^3).

$$H_0: \beta_i = 0$$

$$H_a: \beta_i \neq 0$$

$$\alpha = 0.05$$

We will use a *t*-test with *n-k* degrees of freedom, where *k* is the number of parameters that are being estimated (number of regression coefficients in this case). Our sample test statistic is given in the "t Stat" column in Table 4. We will use the p-value method to test the above hypothesis. The P-value is the probability of observing a test statistic more extreme than what was observed during the regression analysis assuming that the null hypothesis is true. Thus, at a 0.05 significance level, if the p-value is less than 0.05, we reject the null hypothesis H_0 that $\beta_i = 0$.

Table 4: Hypothesis Testing Results

| Model | HDD | | HDD ² | | HDD ³ | |
|-----------|--------|------------|------------------|---------|------------------|---------|
| | t Stat | P-value | t Stat | P-value | t Stat | P-value |
| Linear | 12.27 | 1.4915E-16 | N/A | N/A | N/A | N/A |
| Quadratic | 0.72 | 0.47 | 0.01 | 0.99 | N/A | N/A |
| Cubic | 0.15 | 0.88 | -0.10 | 0.92 | 0.10 | 0.92 |

Source: PGW

From the p-values in Table 4, it is evident that at 0.05 significance level we cannot reject the null hypothesis that the coefficient of HDD^2 and HDD^3 in the Quadratic and Cubic models is zero. Only the HDD coefficient in the Linear model can be concluded to be non-zero at the 0.05 significance level.

Overall Test of Significance of the Regression Model

The F-test of overall significance indicates whether the given linear regression model provides a better fit to the data than a model that contains no independent variables (i.e. an "intercept-only" model). The p-values for all the three models are significantly lower than the 0.05 significance level and indicate that all the three models are statistically significant.

It should be noted that the Linear, Quadratic, and Cubic models that PGW has considered are progressively nested – the Linear model is nested within Quadratic and Cubic; the Quadratic model is nested within the Cubic model. While comparing nested models, where an additional independent variable is added to the regression model to test if the more complex model has a better fit of the given data, the t-test performs better than the overall F-test. As we discussed

earlier, the F-test assesses the overall significance of all the regression coefficients jointly, whereas the t-test examines each coefficient individually.

As we saw in the previous section, the t-tests have indicated that the regression coefficients of independent variables such as HDD^2 and HDD^3 cannot be statistically claimed to differ from zero. It is always recommended that a good, parsimonious regression model is preferred over complicated models with multiple independent variables, especially when these variables do not add to the explanatory or predictive value of the model. In the light of the t-tests, we recommend that PGW use the Linear model specified in Table 1.

Summary

As noted above, our preliminary evaluation concluded that the Linear model explains over 75% of the historical variability observed in peak send outs. Further, we noted that adding polynomials of higher orders to the linear model does not improve the "goodness of fit" as measured by Adjusted R^2 .

In our second analysis, we tested the statistical significance of the regression coefficients and model using the t-tests. The t-tests revealed that the regression coefficients of independent variables in the Quadratic and Cubic models cannot be statistically claimed to be different from zero. Since the analysis indicates that adding variable would not improve the statistical results, we recommend that PGW continue to use the Linear regression model specified in Table 1.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(14) Analysis and data demonstrating, on an historic and projected future basis, the minimum gas entitlements needed to provide reliable and uninterrupted service to priority one customers during peak periods.

Response: Attached is the Capacity Resource and Asset Management Evaluation Report completed by Summit Energy.

JAN 25, 2011

Capacity Resource and Asset Management

EVALUATION REPORT

SummitEnergy



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Executive Summary

After conducting a thorough review of PGW's existing asset portfolio, historical operations, and future load projections; and based upon the assumptions and market dynamics stated herein, Summit has identified several recommendations for the utility's consideration. All recommendations have been made based upon the fundamental premise that PGW's primary objective is providing reliable and cost-effective natural gas supply to its customer base. Each of the recommendations can be considered independently of the others.

After comparing PGW's capacity to its design forecast, Summit recommends the utility evaluate eliminating or reducing portions of its existing asset base, provided favorable asset management arrangements cannot be attained. A stack ranking methodology of the cost of each asset was utilized to help determine the most appropriate areas of focus. Based upon its volume and high cost, Summit recommends the release of PGW's Equitrans storage. In addition to eliminating the Equitrans storage from the utility's portfolio, Summit also recommends consideration be given to reducing its Dominion storage (in addition to its associated Tetco FTS-7 and FTS-8 contracts). We estimate that with a reduction of 10,000 Dth of demand of the Dominion storage (along with the associated storage capacity and FTS transport contracts) PGW would still be capable of serving design scenarios. Despite the utility's ability to meet design scenarios with the recommended capacity reductions, it is important to note that such reductions will increase the utility's reliance on LNG and reduce capacity release credits to the gas cost rate. Additionally, reduction of the Dominion storage from approximately 4 Bcf to 3 Bcf could result in new contract rates that may diminish some or all of the potential savings.

While Summit recommends consideration of the elimination and reduction of some assets, we also recommend maintaining others due to their associated value. First and foremost, we recommend PGW retain all existing long-haul interstate capacity due to both its cost-effectiveness as well as the utility's lateral delivery requirements. Additionally, as both Tetco and Transco are fully subscribed it is questionable whether such capacity could ever be regained in the future if it were surrendered.

While we also currently recommend the retention of PGW's production area storage, the market should continue to be monitored for changing dynamics that would impact or alter the future value of the storage assets. Despite the protection that is afforded against balancing penalties and supply disruptions in the production area, this type of storage becomes less valuable in a marketplace lacking volatility.

Summit also recommends PGW continue to actively monitor potential new asset opportunities. With the significant changes that are taking place in the natural gas complex and particularly in the Northeastern US, it is possible that new supply and/or capacity alternatives could develop that could displace or replace current assets.

When taking into account PGW's assets and historical operations, one additional recommendation is to evaluate the feasibility of creating a more dynamic management of the utility's underutilized long-haul capacity. While the utility currently manages an active capacity release program, it is possible that additional benefits could be gained through administering an even more vigorous program. More participation in weekly long-haul capacity releases could yield incremental returns over and above what has historically been received. Based on current market conditions and the complexities involved, Summit would recommend PGW manage any enhanced release program at this time versus relying on a third party.

The market dynamics in the Northeast have vastly changed in the past several years and are still rapidly evolving. Therefore, Summit recommends a short-term approach to any further contractual asset retention. It is also Summit's belief that PGW would be well served to internally re-evaluate its asset portfolio on a regular basis (annual to every two years) to ensure it can take better advantage of any future market developments.

In conclusion, Summit advocates that PGW utilize the enclosed report to consider these recommendations and take action accordingly.

Introduction and Scope

The following report outlines independent analysis conducted by Summit Energy Services, Inc. (Summit) regarding the natural gas capacity resources of Philadelphia Gas Works (PGW). This assessment was constructed based upon a thorough investigation of the utility's existing gas capacity asset portfolio, the utility's servicing obligations, and a detailed review of existing and projected market fundamentals. The study consisted of the following:

- Review and analysis of PGW current gas supply infrastructure assets (pipeline capacity, storage, and LNG)
- Assessment of range of appropriate levels of capacity resources
- Investigation of alternative supply and/or capacity options
- Examination of value of utilizing third party asset management
- Review of asset management payment structures

Background

PGW initially engaged Summit through a competitive request for proposal to perform a thorough evaluation of both PGW's capacity portfolio holdings and its commodity purchasing strategies. PGW program evaluations have been periodically performed by independent parties in the past, the most recent being a study issued by a third party in 2006. Such studies must be re-evaluated at discrete time intervals to consider changes not only in the load characteristics of PGW itself, but also to evaluate changes that occur in both the commodity and capacity markets.

Summit Approach

Upon engagement, Summit reviewed historical testimony of PGW personnel outlining the utility's operational practices as well as the aforementioned study from 2006. In addition, Summit reviewed testimony from prior Gas Cost Rate (GCR) proceedings.

PGW has historically maintained the perspective that keeping the existing infrastructure portfolio intact best enables the utility to provide safe, adequate, and reliable service to its customers. Although there were recommendations which advocated the future consideration of shedding the most marginal economic assets in the portfolio, the previous study largely supported the utility's viewpoint. A contrary opinion from a GCR proceeding participant, however, called for more definitive action, stating that PGW had a large amount of excess capacity that needed to be relinquished, and that its current portfolio holdings were causing the GCR to be inflated.

As Summit prepared to re-evaluate the PGW portfolio and provide its own assessment, the utility collected and disseminated updated information to Summit including the following:

- Most current information concerning historical design day, design year, and actual delivery send out data
- Utility-controlled Liquefied Natural Gas (LNG) liquefaction and vaporization capacities, boil-off histories, and historical monthly inventories
- Capacity release and off-system sales histories, including both long-term and short-term transactions
- Third party supplier agreements designating volumes, price structures, optionality, delivery points, etc.
- Commodity purchasing program details, including historical purchase information

The provided data was supplemented with questions set forth by Summit as additional information was required, as well as with detailed interviews of PGW strategic and tactical personnel. These discussions provided opportunities to learn about operational constraints and details that were not set forth in the provided documentation. This was particularly necessary with the LNG asset evaluation, as this was not jurisdictional at the interstate level and lacked the visibility of FERC-mandated tariffs for long-haul and storage capacity.

Summit next engaged in its own analysis independent of PGW. This consisted of first establishing a set of assigned costs for each capacity asset in the PGW portfolio. This included a standard set of assumptions involving the commodity cost, heating values, utilization of current interstate pipeline tariffs, and other factors to make sure assets were evaluated using equivalent measures.

Summit included all relevant costs for each asset to assign an “as delivered” cost. This included demand charges, commodity charges, fuel, as well as any carrying costs for assets such as storage and LNG. Storage assets also included transportation for both injection and withdrawal capacity to deliver to the PGW city gate. Additional considerations such as storage cycling requirements and load factor assumptions were also integrated. After each asset was assigned a cost, Summit then stack ranked the assets to ascertain relative costs.

Once such analysis was complete, Summit prepared both a “snapshot analysis” of how PGW is currently managed, as well as a set of recommendations to best position PGW in the future in light of market shifts. These findings and recommendations are incorporated herein.

PGW Historical Operations

Reviewing the historical performance of PGW operations, Summit concludes that PGW has succeeded in its core mission of ensuring that all system delivery requirements are fulfilled. PGW has not had to curtail firm service customers and has been able to satisfy all design day and design winter delivery scenarios. Thus, it is evident that the current asset portfolio is adequate to meet needs now and into the anticipated future. This does not answer the question, however, of whether PGW carries excess capacity in its portfolio. This issue is discussed in the recommendation section of this report.

Long-haul Transportation Capacity

Due to the nature of peaking assets not being required at all times, utilities are naturally over-subscribed (or “long”) on their capacity during most periods. While it would be optimal to have “load following” capacity, it is not feasible for pipelines to provide this service. Thus, most interstate pipeline long-haul firm transportation and storage are based upon demand charges for the largest amount of capacity the purchaser requires on a given day. This requires a careful balancing of one’s needs.

Generally, PGW has performed well balancing such needs. Interstate long-haul capacity is first scheduled to serve “as needed” daily demand, with any unutilized capacity next being scheduled to deliver gas into either interstate storage or PGW-owned LNG liquefaction facilities. Any excess capacity beyond such needs is released into a relatively liquid secondary capacity market using an internal bidding system supplemented by the applicable interstate pipeline electronic bulletin board (EBB) system. This allows other entities to bid on such capacity, though PGW permits the originally selected bidder to retain a right of first refusal to match the right of the highest bid.

PGW's participation in the secondary capacity markets allows them to effectively recoup or "monetize" assets on otherwise sunk costs. The values of these assets can fluctuate over time, and are typically less valuable in times of lower demand.

Storage Capacity

Storage is critical towards achieving the goal of delivering peak day needs, as interstate capacity alone is insufficient for this task. Interstate storage is another asset that PGW extensively utilizes, and is largely divided into production area storage (Gulf region) and market area storage (Pennsylvania market area). These classifications are important due to their very different strategic characteristics.

Production area storage tends to have large amounts of capacity associated per storage field (many are abandoned gas reservoirs), and usually does not have equivalent long-haul transportation contracts associated directly with it, although there are usually receipt point rights that match the storage field.

Production storage has three primary functions. First, it can be used when there are temporary issues with obtaining gas from the furthest points in the Gulf due to hurricanes or well freeze-offs in the winter season. Owners of such storage can make withdrawals until the supply disruption ends.

Second, variations between actual usage and nominations can be managed with storage assets to avoid daily balancing penalties. Additionally, the potential for large penalties (upward of \$50/Dth) to be incurred during Operational Flow Order (OFO) periods would be less likely to materialize, as needed gas can be drawn from storage or unnecessary gas can be injected. This is valuable during crisis times when it is difficult to purchase or sell incremental gas.

Finally, the use of storage in "contango" markets (those where future pricing is significantly higher than current month pricing) make it less expensive to purchase gas in current months, carry volumes in storage, and then withdraw it during higher priced periods. As long as the future month price premium exceeds the cost of the storage assets, storage is a tool for price risk management, in addition to its physical reliability.

Market area storage shares many of the same characteristics as production area storage, but there are some key differentiators. As many of the storage fields have physically less capacity, PGW is required to contract for multiple storage services, each of which has differing pricing and deliverability structures. This does have an ancillary benefit, however, since it effectively diversifies their portfolio across multiple locations, and allows for receipt of gas at additional delivery points in the event of force majeure.

Market area storage is designed to provide security of supply in the event long line purchases are lost, to meet peak day demand and design year requirements, and to provide swing and balancing service. In addition, it provides a physical price hedge for a

portion of the portfolio. PGW manages these fields to be regularly “cycled” according to minimum pipeline requirements.

PGW-Owned LNG Infrastructure

PGW has substantial LNG assets that are owned and maintained internally, including storage facilities at Richmond (4,045,800 Mcf capacity) and Passyunk (253,000 Mcf capacity). These assets are critical to the utility’s ability to meet design day capacity needs due to their large vaporization and send out capabilities (411,000 Mcf/day and 47,000 Mcf/day, respectively). As is typical with LNG storage managed by utilities, PGW holds LNG in order to meet high deliverability needs on a short-term basis, often in the form of “needle-peak” demand spikes in the winter season.

LNG has several drawbacks when compared to more traditional natural gas deliveries. First, liquefaction occurs at much slower rates than the vaporization itself, so replenishing exhausted supplies requires considerably more time. While a market exists for delivered LNG, the associated costs are uneconomical. Second, PGW’s current liquefaction system achieves maximum efficiency only during select parts of the year (late winter and autumn), so it is a rigid schedule.

While there are limitations, the LNG capacity PGW owns has some unique benefits. First, the capacity itself is substantial (approximately 4.3 Bcf). Although it would only satisfy 10 days of deliverability at full utilization, the LNG provides insurance against a catastrophic upstream event. Second, it serves as an economic arbitrage tool in the event of a price spike. In such an event, PGW could look to sell incoming pipeline/storage gas to another delivery point for a short period of time, and displace such delivery with LNG. Thus, while illiquid relative to capacity markets, LNG assets could actually result in higher monetization in selected instances. Lastly, as they are self-owned, these LNG assets are not subject to the same rules governing interstate storage, including cycling requirements, variable tariff pricing over time, etc.

Capacity Monetization

PGW employs a variety of strategies to balance its own load requirements and effectively mitigate demand charges. They have increasingly become an active participant in the capacity release market and generally have had little difficulty finding a third party to whom it could release its excess pipeline demand. PGW releases capacity as available on either a monthly or semi-monthly basis dependent upon how actual load is performing relative to plan. They have been successful at obtaining values for some longer term and winter releases near, at, or above maximum tariff rates. This practice helps to offset nearly all demand charges associated with those volumes that are released. Conversely, shorter term releases made during the summer season have often yielded values that are well below actual demand cost, which in turn fail to recover the total cost of the released volumes. Over recent years, PGW’s expanded capacity release activities have yielded an average release benefit increase of over 600% when comparing the early 2000’s to the years leading up to 2010.

In addition to the capacity release strategy, PGW historically has looked at off-system sales (i.e., bundling capacity availability with natural gas itself and selling to third parties at delivery points other than PGW). This option has several limitations per PGW's current resource mix. The off-system sales market is much more short-term in nature (often for a few days at most) and for maximum benefits requires marketing of the supply. Additionally, unlike capacity release, which utilizes the pipeline EBB to monitor and credit back demand dollars, PGW has to devote resources to nominate gas and bill the buyer accordingly. This method of cost recovery works best when pricing substantially rises due to system constraints or extreme weather conditions. In select years past, this was strictly done during instances where PGW was solicited by a third party. Such activities yielded financial benefit for the utility and were based upon existing market conditions.

PGW has also recently employed a one year asset management agreement for a portion of its storage capacity. This type of release has the potential to recover all or more than the value of the actual demand charges. A third party will often pay a premium for such assets (as often pipeline storage can be oversubscribed) to more effectively arbitrage trading positions.

PGW has utilized this strategy successfully for their Transco WSS production storage, releasing approximately half of their storage position to a third party at a rate that exceeded the utility's actual tariff costs. Under this Asset Management Agreement (AMA), PGW releases 1.5 Bcf of Transco WSS storage capacity in return for \$1.1 million via monthly payment installments. The third party arrangement, which is currently the only instance of PGW utilizing the services of an outsourced asset manager, has been a lucrative agreement for the utility based on the market value of the storage capacity. That said, it should be noted such values of storage will fluctuate with the market and the value that can be derived will vary.

Assumptions

Summit approached its analysis with a core set of assumptions. Some of these are more numerical in nature to better evaluate the assets in the portfolio on an "apples to apples" basis. Others more specifically focus around organizational goals.

Reliability

Summit operated under the fundamental premise that PGW has a mandated public service duty to ensure that its service delivery requirements must always be met. This is a different operational mindset than what is held by many non-utility entities. For instance, a for-profit industrial might elect to shut down production and sell off any gas if premium prices existed in the marketplace. Other companies, such as trading entities, might incorporate a greater element of risk into their decision-making by reducing capacity commitments and relying on supply availability at the time it is required.

Summit also focused on unique attributes of the PGW system, especially its reliance on interstate pipeline laterals and its limited LNG liquefaction capabilities. Although PGW

is served by the interstate pipeline system, PGW is actually fed by laterals off of the main pipeline system which constrains deliveries during winter peak demand times when the laterals are delivering full requirements. In addition, Summit examined the relative subscription rates of capacity and storage on the interstate systems to determine the availability to replace any asset removed from the capacity portfolio. Based on such analysis, one core assumption is that there currently tends to be a limited ability to replace service with alternative firm asset commitments. Last, Summit assumed that a financial commitment (i.e., a delivered contract with liquidated damages) was inferior to a physical asset, due to downstream damage that could be created in the event the supplier was unable to fulfill delivery requirements during a peak day.

Economics

Summit prepared its analysis with a standard set of economic assumptions to ensure uniformity as it evaluated each capacity asset in the PGW portfolio. While such assumptions would change over the contract life of the respective assets and under varying commodity pricing thresholds, the relative values of each asset generally remain consistent.

Forward pricing of natural gas changes daily, so to incorporate consistency in our analysis, our first assumption was a base case NYMEX estimate of \$5.00/Dth. Additionally, analysis was run using NYMEX estimates ranging from \$3.50/Dth to \$7.00/Dth in various scenarios.

Summit also used currently effective tariffs to project demand and commodity charges, fuel ratios and storage ratchet requirements. Such numbers are subject to future rate case adjustments, but generally have more stability than the natural gas commodity itself. While different pipeline filings could affect the value of one capacity asset versus another, such changes occur infrequently and can be evaluated periodically to ensure where they each rank from a cost standpoint. PGW has swing contracts within their supply portfolio that carry an additional pipeline demand component, as these are no-notice contracts. The models do not take these additional demand charges into account, as the impact of these charges on the stack ranking would be negligible.

Operations

Where necessary, Summit assumed a Btu conversion of 1.03 to convert Mcf measurements to Dth. This is also the value used by PGW in many of their conversions, and typically, there is low variation in Btu factors across interstate pipelines.

Historical data indicates consistent year-over-year load declines independent of weather factors, which has been confirmed by PGW's own analysis. While this decline is generally modest (approximately half a percent per year), this reinforces the need to perform an internal review of its assets based on current and future needs. For our analysis, Summit used the 2010/2011 Design Day/Year model (shown on next page). Summit did not model asset needs based on a normal load forecast as this was considered imprudent given PGW's core mission of customer reliability.

Second, Summit assumed historical storage injection and withdrawal patterns, including fulfilling cycling requirements as governed by tariffs. This includes injecting gas on a daily and seasonal basis, which limits maximizing more aggressive “fill” strategies that would be based solely on price. Similarly, withdrawal from each individual storage field creates both a floor and a cap on deliverability. Summit assumed compliance with applicable pipeline tariffs as well as a fairly consistent cycling pattern based upon historical data.

2010-11 Design Forecast* (MDth)

| | Sep-10 | Oct-10 | Nov-10 | Dec-10 | Jan-11 | Feb-11 | Mar-11 | Apr-11 | May-11 | Jun-11 | Jul-11 | Aug-11 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 42.0 | 42.5 | 62.3 | 115.3 | 678.7 | 645.5 | 475.2 | 282.3 | 189.3 | 42.6 | 42.6 | 42.3 |
| 2 | 42.0 | 42.5 | 89.7 | 174.6 | 628.6 | 585.8 | 447.3 | 264.7 | 155.0 | 42.6 | 42.6 | 42.3 |
| 3 | 42.0 | 42.5 | 108.0 | 204.3 | 598.6 | 555.9 | 419.4 | 238.4 | 129.3 | 42.6 | 42.6 | 42.3 |
| 4 | 42.0 | 42.5 | 126.2 | 224.1 | 588.6 | 516.1 | 400.7 | 229.6 | 120.7 | 42.6 | 42.6 | 42.3 |
| 5 | 42.0 | 42.5 | 135.3 | 243.8 | 558.5 | 506.2 | 391.4 | 220.8 | 112.2 | 42.6 | 42.6 | 42.3 |
| 6 | 42.0 | 42.5 | 144.5 | 273.5 | 538.5 | 486.3 | 382.1 | 212.0 | 103.6 | 42.6 | 42.6 | 42.3 |
| 7 | 42.0 | 42.5 | 153.6 | 283.4 | 518.5 | 466.4 | 372.8 | 203.2 | 95.0 | 42.6 | 42.6 | 42.3 |
| 8 | 42.0 | 57.7 | 162.7 | 293.3 | 498.4 | 456.4 | 363.5 | 194.4 | 95.0 | 42.6 | 42.6 | 42.3 |
| 9 | 42.0 | 57.7 | 171.9 | 303.2 | 488.4 | 446.4 | 354.2 | 185.6 | 86.5 | 42.6 | 42.6 | 42.3 |
| 10 | 42.0 | 65.4 | 181.0 | 313.1 | 478.4 | 436.5 | 344.9 | 176.8 | 86.5 | 42.6 | 42.6 | 42.3 |
| 11 | 42.0 | 73.0 | 190.1 | 322.9 | 468.4 | 426.5 | 335.6 | 176.8 | 77.9 | 42.6 | 42.6 | 42.3 |
| 12 | 42.0 | 80.6 | 199.2 | 332.8 | 458.4 | 416.6 | 326.3 | 168.0 | 69.3 | 42.6 | 42.6 | 42.3 |
| 13 | 42.0 | 80.6 | 208.4 | 342.7 | 448.4 | 406.6 | 317.0 | 159.2 | 69.3 | 42.6 | 42.6 | 42.3 |
| 14 | 42.0 | 88.2 | 217.5 | 352.6 | 438.3 | 396.7 | 307.7 | 150.4 | 60.8 | 42.6 | 42.6 | 42.3 |
| 15 | 42.0 | 95.9 | 226.6 | 362.5 | 428.3 | 386.7 | 298.4 | 141.6 | 60.8 | 42.6 | 42.6 | 42.3 |
| 16 | 42.0 | 103.5 | 235.7 | 372.4 | 418.3 | 376.8 | 289.1 | 132.8 | 43.6 | 42.6 | 42.6 | 42.3 |
| 17 | 42.0 | 103.5 | 244.9 | 382.3 | 418.3 | 366.8 | 279.8 | 124.1 | 43.6 | 42.6 | 42.6 | 42.3 |
| 18 | 42.0 | 111.1 | 254.0 | 392.2 | 408.3 | 356.9 | 270.5 | 115.3 | 43.6 | 42.6 | 42.6 | 42.3 |
| 19 | 42.0 | 111.1 | 263.1 | 402.0 | 398.3 | 346.9 | 261.1 | 106.5 | 43.6 | 42.6 | 42.6 | 42.3 |
| 20 | 42.0 | 118.8 | 272.2 | 411.9 | 388.3 | 337.0 | 251.8 | 97.7 | 43.6 | 42.6 | 42.6 | 42.3 |
| 21 | 42.0 | 118.8 | 281.4 | 421.8 | 378.3 | 327.0 | 242.5 | 88.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 22 | 42.0 | 126.4 | 290.5 | 431.7 | 368.2 | 317.1 | 233.2 | 88.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 23 | 47.5 | 126.4 | 299.6 | 441.6 | 358.2 | 307.1 | 223.9 | 71.3 | 43.6 | 42.6 | 42.6 | 42.3 |
| 24 | 47.5 | 134.0 | 308.8 | 451.5 | 348.2 | 297.2 | 214.6 | 71.3 | 43.6 | 42.6 | 42.6 | 42.3 |
| 25 | 53.0 | 134.0 | 308.8 | 471.3 | 338.2 | 267.3 | 205.3 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 26 | 58.6 | 141.7 | 317.9 | 481.2 | 328.2 | 257.4 | 196.0 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 27 | 58.6 | 149.3 | 327.0 | 491.0 | 318.2 | 247.4 | 177.4 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 28 | 69.6 | 164.6 | 345.3 | 510.8 | 298.1 | 197.6 | 168.1 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 29 | 80.7 | 172.2 | 372.6 | 510.8 | 288.1 | | 149.5 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 30 | 97.2 | 195.1 | 427.4 | 530.6 | 258.1 | | 121.6 | 44.9 | 43.6 | 42.6 | 42.6 | 42.3 |
| 31 | | 218.0 | | 580.0 | 188.0 | | 84.3 | | 43.6 | | 42.6 | 42.3 |

*Based on the temperature pattern for a design year in the PGW Model. PGW's design day send out at 0° is 681,200 Mcf.

Market Dynamics

An analysis of historical market drivers and pricing trends is often effective for establishing a forecast for future contingencies. This approach, however, loses efficacy if new pricing drivers are introduced such that the supply and demand fundamentals of the market are altered. The following analysis reveals that many pre-2007 market conditions are no longer domestic driving factors today. Further, a new paradigm has evolved in the natural gas complex specifically impacting Northeast gas transportation markets.

US Natural Gas Landscape

In 2006 and 2007, most, if not all, energy markets were indicative of the rapid economic growth experienced both domestically in the US, and abroad. Natural gas consumption continued to witness an upward growth trend into 2007, pushing demand to record levels. Optimism of seemingly unstoppable growth for energy helped push fuel prices to elevated levels and had most market analysts expecting an extended upward trend in prices, which in turn resulted in growing investor interest.

Coming out of 2007, demand evidence was compelling: US natural gas consumption in the first half of 2008 exceeded that of 2007, setting new five-year highs. Demand was not alone in supporting prices during this time. After many years of strong investment in natural gas exploration and production (the gas rig count had been setting new highs for four years running), natural gas production in the US was unable to keep pace with demand. The amount of gas in storage was insufficient at five-year average levels. The result: a steady uptrend in pricing through 2008.

The impact of the "Great Recession" on US natural gas consumption was delayed, but by early 2009, demand had fallen to five-year minimums. Despite this, US natural gas production remained very strong as a result of the favorable investment environment of 2008. In fact, gas production in the US set new highs in 2009. High volumes of natural gas in storage resulted and subsequently persisted throughout 2009. As such, gas prices fell coming out of 2008 and heading into 2009.

In mid 2009, US natural gas consumption began showing signs of recovery and had recovered to near five-year highs by early 2010. US natural gas production also continued to show impressive growth as a result of shale production and storage volumes reached an all-time high in November 2010. Logically, gas prices have remained near the \$4-\$5 range since March.

As we turn to 2011 and beyond, a few major themes emerge as key drivers for the US natural gas market. Demand hinges on industrial market recovery as well as technological advancements through increased investment in the exploration and production industry. The fundamental outlook going forward is for strong growth in production to persist at rates greater than the expected growth in consumption. As such, Summit anticipates prices to remain relatively flat through 2011 and into 2012. Over the next 5 years, our outlook is for the market to move in a slightly upward direction; however, prices are not expected to reach the highs seen pre-2009.

Regional Transportation Pricing Landscape: Northeast

Basis costs in the Northeast historically have been heavily influenced by the incremental escalation of regional natural gas demand while interstate pipeline capacity infrastructure has remained relatively static. The resulting shortage of pipeline capacity to bring sufficient gas into the region created a floor for regional transportation prices making the Northeast a premium gas market. Other regional market drivers like weather, particularly the severity and duration of winter temperatures and precipitation, LNG capabilities, and Canadian gas imports into the region have also been key pricing drivers.

Much has changed in the Northeast since the 2006 study of PGW's assets was completed. The 2006 study was written in the wake of two major hurricanes in 2005 that introduced extreme national natural gas pricing volatility and took significant Gulf supplies off-system for the winter of 2005-2006. Since 2006, we have not seen similar destructive hurricane activity hit producing regions in the Gulf. Subsequently, the credit crisis of 2008 introduced another macro-environment alteration to the industry. Additionally, the cost of obtaining capital for the whole of the industry increased.

The largest market drivers in the Northeast post-2006 have not been the credit crisis nor hurricane activity. Rather, the Northeast natural gas market has responded to simple supply and demand fundamentals consisting of an increase in production and pipeline infrastructure and a simultaneous dip in consumer demand.

In 2008, Northeast natural gas consumption was approximately 9 Bcf/day. In late 2008, the last leg of the Rockies Express Pipeline brought an additional 1.8 Bcf/day into the region via the TCO pipeline system. This provided a 20% boost to Northeast supplies and brought immediate relief to the historically premium regional pricing complex.

Marcellus Shale gas has also introduced increased supply into the Northeast. This intra-region supply is expected to eventually bring as much as 6 Bcf/day into the Northeast's supply mix. Currently, Marcellus Shale is contributing 0.7 to 1.3 Bcf/day of supply. The long-term impact of this shale find is dependent on the following: further build-out of a pipeline gathering system that will connect Marcellus Shale gas to major interstate pipelines, the domestic price of natural gas (which will impact break-even rates for Marcellus drilling rigs), and environmental legislation regarding the hydraulic fracturing required to pull shale gas from underground formations.

The natural gas pipeline infrastructure in the Northeast has experienced exponential growth since 2009. Fifteen new pipeline extensions are set to be completed in the Northeast region by 2013 that will allow approximately 11 Bcf/day¹ in additional gas throughput. This increase in infrastructure is a dramatic shift from the early to mid 2000's when new pipeline build-outs were far less common. Historically, due to the lack of infrastructure, basis prices were bid up to premium levels as various parties competed for the remaining pipeline volumes that were not consumed by upstream pipeline market

¹ www.ferc.gov/industries/gas/gen-info/horizon-pipe.pdf

participants. The new infrastructure has already provided significant relief to regional basis prices and has allowed the new supply from the Rockies and Marcellus Shale to move with more freedom in the region.

While the EIA has not yet released its calendar-year 2010 natural gas consumption numbers for the Northeast states, we expect demand to have decreased proportionately to the broader macro-economic impact of the United States recession.

The changes to the supply and demand landscape of the Northeast outlined above have caused regional transportation prices and assets to decline in value. Excess intra-region supply threatens to displace a large portion of gas entering the region from the Gulf, Rockies, and Canada. While interstate pipeline capacity assets into the Northeast, particularly from the Gulf, have managed to retain value (likely due to a 'wait-and-see' approach as to whether the new supply paradigm will persist in the Northeast), regional basis prices have retreated significantly since early 2009. The new supplies have all but removed the historical pricing volatility in the region.

Summit Analysis Process

Based upon Summit's historical findings of the PGW program as well as the above mentioned dynamics in the marketplace that have occurred in the last several years, Summit designed its own "cost to deliver" model that effectively stack ranks each contracted capacity asset in the PGW portfolio. While the model is based upon the assumptions stated herein, these have been examined through multiple scenarios, and our analysis indicates relative asset rankings generally remain consistent.

The model integrated financial costs including the natural gas commodity as well as associated tariff charges. Additional costs associated with storage assets, such as transportation costs to deliver withdrawals from storage and applicable carrying costs unique to each storage agreement, were also incorporated.

These assets were stack ranked solely on a cost basis. In the first set of scenarios, cost models assumed no spread between winter and summer prices (i.e., NYMEX values flat throughout year). As seen in the table on the following page, the impact of increases in commodity cost to the relative weighted average costs is marginal. Even if NYMEX values were to return to their historical settlement highs, the stack rankings within each category remain consistent.

| | | NYMEX: \$3.5/Dth Year- Round | NYMEX: \$5/Dth Year- Round | NYMEX: \$7/Dth Year- Round |
|------------------------------------|--------------------|---|---|---|
| Market Area Storage | Equitrans SS3 | \$7.665 | \$9.442 | \$11.811 |
| | Tetco SS1-A* | \$6.307 | \$8.035 | \$10.339 |
| | Dom GSS Tetco FTS8 | \$6.062 | \$7.766 | \$10.037 |
| | Dom GSS Tetco FTS7 | \$6.022 | \$7.726 | \$9.998 |
| | Tetco SS1-B | \$5.743 | \$7.471 | \$9.776 |
| | Transco GSS | \$5.314 | \$6.976 | \$9.192 |
| | Transco S2 | \$5.290 | \$6.955 | \$9.174 |
| | LNG | \$4.329 | \$5.953 | \$8.119 |
| Production Area Storage | Transco ESS1 | \$5.447 | \$7.036 | \$9.155 |
| | Transco ESS2 | \$5.447 | \$7.036 | \$9.155 |
| | WSS Transco FT* | \$4.594 | \$6.200 | \$8.341 |
| Long-Haul Transport | Tetco CDS | \$4.504 | \$6.145 | \$8.333 |
| | Tetco FT-1 | \$4.490 | \$6.130 | \$8.318 |
| | Transco FT | \$4.237 | \$5.827 | \$7.947 |

*Tetco SS1-A and WSS Transco FT are primary tools employed by PGW to avoid interstate pipeline balancing penalties on differentials between actual consumed and delivered volumes.

Next, cost models assumed \$5.00 NYMEX in summer months, with summer-to-winter spreads of \$.50, \$1.00, and \$2.00. Since most gas is consumed in the winter months, the model assumed storage gas was bought in the summer and used in the winter, while long-haul was based on winter pricing. As seen in the table below, growth in summer-to-winter spreads increases the value of all storage assets, and the lowest cost storage options begin to provide a lower weighted average cost of gas than long-haul; however, the increased value does not outweigh the costs for Equitrans in any of the sample scenarios. In addition, such large summer-to-winter commodity spreads are not expected to materialize in the foreseeable future, as spreads have eroded in recent years due to gas-fired power generation and high storage levels.

| | | NYMEX: \$5/Dth Summer, \$5.5/Dth Winter | NYMEX: \$5/Dth Summer, \$6/Dth Winter | NYMEX: \$5/Dth Summer, \$7/Dth Winter |
|------------------------------------|--------------------|--|--|--|
| Market Area Storage | Equitrans SS3 | \$9.442 | \$9.442 | \$9.442 |
| | Tetco SS1-A | \$8.035 | \$8.035 | \$8.035 |
| | Dom GSS Tetco FTS8 | \$7.766 | \$7.766 | \$7.766 |
| | Dom GSS Tetco FTS7 | \$7.726 | \$7.726 | \$7.726 |
| | Tetco SS1-B | \$7.471 | \$7.471 | \$7.471 |
| | Transco GSS | \$6.976 | \$6.976 | \$6.976 |
| | Transco S2 | \$6.955 | \$6.955 | \$6.955 |
| | LNG | \$5.953 | \$5.953 | \$5.953 |
| Production Area Storage | Transco ESS1 | \$7.036 | \$7.036 | \$7.036 |
| | Transco ESS2 | \$7.036 | \$7.036 | \$7.036 |
| | WSS Transco FT | \$6.200 | \$6.200 | \$6.200 |
| Long-Haul Transport | Tetco CDS | \$6.692 | \$7.239 | \$8.333 |
| | Tetco FT-1 | \$6.677 | \$7.224 | \$8.318 |
| | Transco FT | \$6.357 | \$6.887 | \$7.947 |

Based on the scenarios examined on the previous page, changes in the absolute cost of gas do not have a significant impact on the relative cost of delivery options. Additionally, large summer-to-winter commodity spreads are not expected, and modest spreads do not result in changes to the assessment of the highest cost assets. Thus, recommendations for optimization are based on the \$5.00 year-round NYMEX scenario.

Asset Stack Ranking

| Market Area Storage | Max Storage Quantity (Dth) | Storage Demand (Dth) | Estimated WACOG (\$/Dth) |
|---------------------|-------------------------------|-------------------------|-----------------------------|
| Equitrans SS3 | 522,500 | 4,998 | \$9.442 |
| Tetco SS1-A | 2,647,080 | 44,118 | \$8.035 |
| Dom GSS Tetco FTS8 | 3,007,810 | 22,495 | \$7.766 |
| Dom GSS Tetco FTS7 | 911,161 | 6,815 | \$7.726 |
| Tetco SS1-B | 2,462,120 | 20,847 | \$7.471 |
| Transco GSS | 4,123,733 | 53,871 | \$6.976 |
| Transco S2 | 466,554 | 5,191 | \$6.955 |
| LNG | 4,428,073 | 469,680 | \$5.953 |

| Production Area Storage | Max Storage Quantity (Dth) | Storage Demand (Dth) | Estimated WACOG (\$/Dth) |
|-------------------------|-------------------------------|-------------------------|-----------------------------|
| Transco ESS1 | 482,792 | 47,986 | \$7.036 |
| Transco ESS2 | 656,013 | 65,201 | \$7.036 |
| WSS Transco FT | 3,335,909 | 39,246 | \$6.200 |

| Long-Haul Transport | Capacity (Dth) | Estimated WACOG (\$/Dth) |
|---------------------|----------------|-----------------------------|
| Tetco CDS | 75,000 | \$6.145 |
| Tetco FT-1 | 59,822 | \$6.130 |
| Transco FT | 167,179 | \$5.827 |

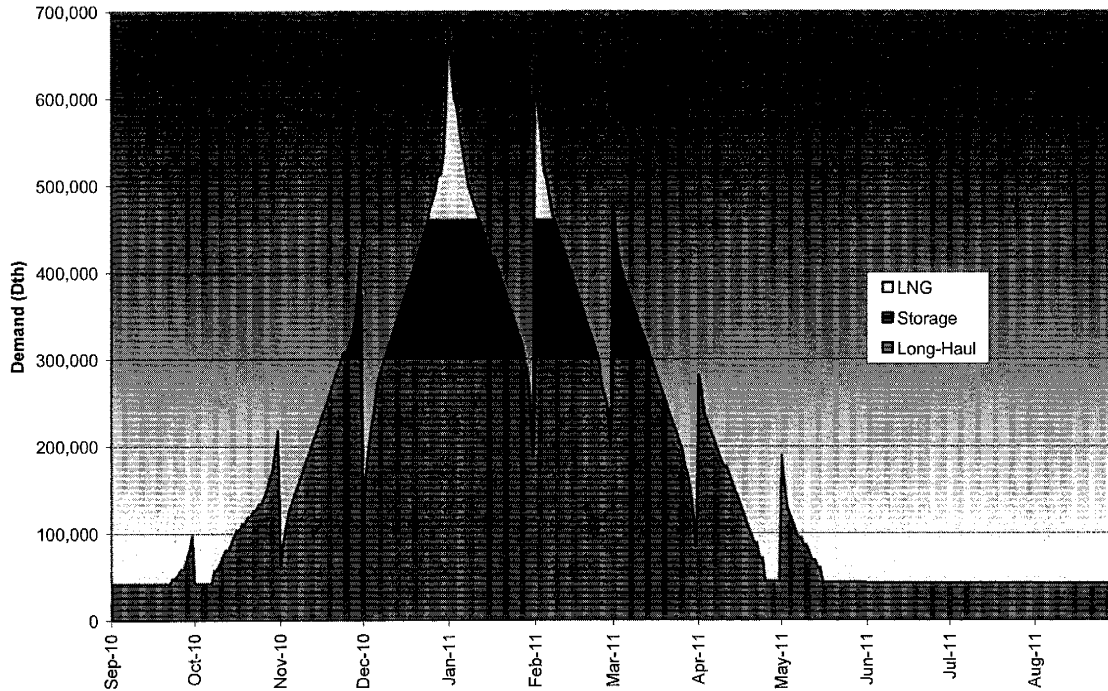
Based upon our initial analysis of storage assets (table above), Equitrans storage was the highest cost delivered asset to serve PGW. Tetco SS1-A was the next highest cost asset due to its relatively high reservation of demand, though this asset plays a significant part in meeting PGW's balancing needs on the Tetco pipeline. Long-haul transportation across Tetco or Transco is intuitively the cheapest option, as it is taken directly from the production area, assessed fuel and transportation costs, and then delivered directly to the market. Storage requires additional costs (demand, storage capacity, fuel, and associated transportation), which raise the total cost of delivery.

After the initial stage of cost-based stack ranking, Summit next created a delivery prioritization model that incorporated relative receipt and delivery constraints of each asset. Thus, long-haul and short-haul interstate capacity is inherently limited by the maximum daily quantity (MDQ) of each transport agreement. Similarly, some storage agreements not only have limits on their injections, withdrawals, and total capacity, but also on seasonal requirements such as ensuring certain percentages of gas in storage are actually withdrawn. Finally, PGW-owned LNG not only has capacity restrictions, but also operational constraints on its liquefaction. These constraints are more physical than contractual.

Summit then incorporated the 2010-2011 peak design consumption model and evaluated alternative scenarios when considering the appropriate ways to guarantee deliveries are met. This included ensuring that maximum deliveries were made via already contracted assets delivering at variable costs, thus avoiding additional incremental purchases. Also, LNG reserves were always maintained to ensure adequate deliverability from vaporization would exist for any necessary peak day/year.

Given PGW's limited capability to aggressively refill its LNG capacity, Summit not only evaluated the needs of a single design year, but also that of two consecutive design years. The results illustrate that as the highest cost storage capacity is eliminated, PGW quickly approaches a scenario where it might not be able to meet its operational requirements.

Design Year Profile



LNG Usage – Design Year Scenarios

| Non-LNG Assets | Non-LNG Capacity (1) | LNG Inventory Needed for Design Winter (1,2) | LNG Inventory Needed for Consecutive Design Winters (1,3) |
|---|----------------------|--|---|
| All current assets | 460,336 | 2,237,800 | 2,965,601 |
| Current asset mix less 5,000 Dth of demand | 455,336 | 2,371,900 | 3,233,801 |
| Current asset mix less 7,500 Dth of demand | 452,836 | 2,441,900 | 3,373,801 |
| Current asset mix less 10,000 Dth of demand | 450,336 | 2,513,053 | 3,516,106 |
| Current asset mix less 12,500 Dth of demand | 447,836 | 2,586,075 | 3,662,151 |
| Current asset mix less 15,000 Dth of demand | 445,336 | 2,664,129 | 3,818,257 |

- (1) Volumes in Dth.
- (2) Volume represents the design demand in excess of non-LNG capacity, inclusive of boil-off volumes for withdrawal season.
- (3) Volume represents the minimum amount of LNG necessary at the beginning of withdrawal season in year 1 to meet two consecutive design winters; this assumes 2,000,000 Dth of liquefaction in a calendar year.

Summit's modeling revealed that any combination of assets that satisfy consecutive design year requirements would always result in some unutilized capacity in any reasonable asset mix. Given that PGW will necessarily be "long" in most circumstances, Summit then proceeded to evaluate which assets could either be directly monetized (capacity release) or indirectly monetized (asset management relationships, off-system sales).

Outsourced Asset Management

PGW requested that Summit advise the Company regarding possible AMAs, including a review of the best practices regarding the payment structure of such arrangements. An asset management program provides for the utility to turn over the management of all or some of its assets to a third party. Under this arrangement, the asset manager commits to satisfy the utility's delivery obligations in return for having the ability to use the asset or assets however the manager decides when such deliveries are not required. The release of one's entire asset portfolio is a popular strategy for smaller municipalities (~5 Bcf or less of annual firm requirements) who will bundle and assign their assets while simultaneously fulfilling their delivery requirements. It enables the utility to reap a larger recovery of dollars than they would have by self-managing their portfolio.

With the exception of the aforementioned AMA for a portion of PGW's storage, PGW does not currently employ this type of asset management strategy and generally retains institutional self-control of its asset base with the exception of capacity release programs. There are numerous asset managers in the marketplace with the primary objectives of providing reliable gas supply to the utility city gate, managing the utility's existing asset

base, and optimizing the value of such contracts. Additionally, there are numerous natural gas distributors who utilize the services of a third party asset manager. Despite this utilization, however, the strategy is not necessarily the most appropriate approach for all gas distributors, nor does it appear to be a rapidly increasing practice. Instead, many utilities regularly perform internal review of their capacity needs.

For a utility, releasing control and management of one's assets to a third party can, at times, pose significant risks and complexities that may offset the benefits achieved by the program. The primary benefit that can be achieved under a third party asset management agreement is the optimization of those assets, some of whose benefits may otherwise be unrealized. Outsourced firms may be better positioned to deliver optimization value because of the following:

- Inherently possess larger scale and flexibility
- More substantial and broader market presence/expertise
- Greater resource availability
- Core operational function

Additionally, there may be value derived from an outsourced AMA as it may enable the utility to focus more intently on customer service and its distribution operations.

While there can be benefits from AMAs, there are also numerous risks to consider. Some of the risks that may exist for a gas distributor evaluating such an arrangement consist of the following:

- Diminished control over a primary business function
- Loss of expertise in a key operational arena
- Exposure to counterparty risk
- Program profitability limitations
- Performance/auditing validation

If PGW considers the possible utilization of an outsourced asset management firm, the utility should carefully weigh the pertinent risks and benefits to ensure the goals of the program align with their overall business objectives. PGW should also consider any internal operational benefits or constraints that may enhance or deter the introduction of such a third party firm. In addition, it is prudent to be cognizant of futures pricing and market dynamics in order to assess the potential viability and profitability of entering an AMA.

Current market levels reflect a summer-to-winter spread differential of approximately \$0.55/Dth, therefore demonstrating a relatively low level of potential profit should any holder look to arbitrage a storage asset. This can be contrasted with market levels from December 2009 (one year ago) when a summer-to-winter spread differential of approximately \$1.00/Dth existed in the market. In this example, the asset's potential value was nearly cut in half over just a 12-month span. A more distant market snapshot from the 2006 – 2007 timeframe would reflect a \$3.00/Dth differential. This second example renders a \$2.45/Dth decrease in value when compared to current market. These

various points in time demonstrate how storage profitability can rapidly erode in an ever-changing marketplace.

Due to Summit's market outlook, we do not anticipate a significant increase in the summer-to-winter spreads over the short-term, thus reducing the overall value that can be derived from PGW's storage assets. Because of current market conditions and the aforementioned spread analysis, the likelihood of interested parties willing to enter AMAs is reduced as is the compensation that could be realized.

However, due to the nature of the evolving natural gas market, individual PGW assets may present an AMA opportunity (as opposed to a third party assuming the entire utility portfolio). This is due to the fact that many niche counterparties might ascribe a higher value to a specific asset than another based upon their own unique requirements. As an example, a growing producer with Marcellus Shale production in Pennsylvania might highly value storage and short-haul capacity, but have little interest in long-haul capacity from the Gulf coast. Thus, an exploration of the options surrounding each independent asset could yield greater value than the entire portfolio as well as increase the number of interested parties.

Should market fundamentals support entering into an AMA, there are various forms of compensation that can be structured with the asset manager. The most prevalent payment constructs consist of 1) outright fixed payment over the term of the agreement and 2) shared-benefit payments based on a percentage split of the gains from the optimization. An asset with a greater value will typically render increased flexibility in terms of negotiating compensation structures as well as potentially other contractual criteria. Ultimately, each party's projected valuations of the asset(s), risk appetite, and regulatory constraints can shape the compensation structure of the agreement.

Due to the nature of PGW's core objectives of providing reliable and cost-effective gas supply to its customer base, Summit would consider a set monthly payment schedule as a best practice, provided such payment represents a value PGW deems as fair and appropriate for such asset(s) in the marketplace. This type of structure would produce guaranteed payments that would benefit ratepayers. By securing a set value for the asset upon entering the AMA, market risk can be eliminated and therefore a known compensation threshold would be established. Furthermore, a fixed price agreement avoids the speculative nature associated with a shared-benefit arrangement that is reliant upon future market outcomes to determine its revenue.

Summit Recommendations

Based upon our analysis of current PGW operating parameters, existing and continuing market trends, and an integrated analysis, Summit makes the following recommendations.

1. Evaluate elimination or reduction of portion of current asset base after assessing asset management opportunities, and leverage PGW-owned LNG assets.

- Eventual release of Equitrans storage as it is the highest unit cost asset in the PGW portfolio; the net cost of this asset per year is approximately \$541,000 (after adjustments for net capacity release credits). However, due to contractual notification of abandonment provisions and the unique geographical position of this asset within the Marcellus Shale supply basin, it would be prudent to first perform an RFP to determine if opportunity exists for a third party AMA that would guarantee value above PGW's cost.
- While Tetco SS1-A is the next highest cost delivery option in the stack ranking, it provides PGW with flexibility in balancing load. For every 1 degree of variance between actual and expected temperatures, PGW experiences a change in demand of approximately 10,000 Dth. Since PGW is able to retroactively balance their load through their SS1 assets, PGW's exposure to balancing penalties is reduced. Hence, Tetco SS1 assets should be retained.
- The next highest cost asset is Dominion storage, along with its Tetco FTS-7 and FTS-8 contracts. Reduction of 10,000 Dth of demand at contract renewal (along with associated storage capacity and FTS transport contracts) would not impede PGW's ability to serve customers in design scenarios. The net cost of this asset per year is approximately \$670,000 (after adjustments for net capacity release credits). It is important to note that there is potential that FTS-7 and FTS-8 contracts could eventually bring Marcellus Shale gas into PGW, thereby changing their functionality and subsequent value. Since the Dominion agreement is specially negotiated, any subsequent renewal needs to factor in both the risk and opportunities of both new pricing and delivery terms changing; reduction of the Dominion storage from approximately 4 Bcf to 3 Bcf could result in new contract rates that may diminish some or all of the potential savings.
- PGW should maintain their LNG inventory consistent with the appropriate level of risk, understanding that their liquefaction capabilities are limited, in order to serve consecutive design winters. Any elimination and/or reduction of designated assets would necessarily entail a greater reliance upon PGW's own LNG assets.
- Many natural gas utilities in PA and surrounding areas do not have utility-owned LNG facilities. For those that do, LNG usage on a peak design day comprises of approximately 27% of the total portfolio; however, when propane is incorporated with LNG into peak day usage for these same utilities, the proportion increases to 32%. Currently, PGW's LNG comprises 32% of their peak design day portfolio. Reducing portions of their non-LNG capacity as referenced in this report would increase this amount to 34%.

2. Production area storage still worthwhile assets; however internal evaluation should be an on-going process

- It serves as protection against supply area production “shocks” and interstate pipeline balancing penalties.
- It is valued as a hedging tool on inter-seasonal basis becoming less valuable as market volatility has flattened.
- Monetization opportunities exist with asset managers, but value may decrease with lessened volatility.
- Internal evaluation of WSS and Eminence storage value should occur regularly.

3. Maintain current long-haul interstate capacity allocations

- Pipeline lateral delivery requirements necessitate preservation of delivery rights.
- It is the least expensive delivery option.
- Transco and Tetco capacity to market area is currently fully subscribed and could potentially be lost if surrendered.
- Long-haul assets are easiest to monetize when not required due to liquid secondary release market.

4. Evaluate more dynamic/active resource management (internal or external) for underutilized assets

- Traditional asset management (entire portfolio turnover to third party with payment/shared savings structure) is likely unworkable due to complexity and declining liquidity of capable providers.
- Certain individual assets, particularly those where long-term elimination or reduction is contemplated, should be bid out for potential AMAs to validate the market value of such assets against PGW’s costs.
- More aggressive tactics such as weekly long-haul capacity releases marketed to others should be considered even if potentially requiring additional resources.

5. Monitor supply/capacity market for more economical infrastructure

- Marcellus Shale/transport projects should be entertained to determine if they can displace Transco/Tetco storage and/or portion of LNG-filled capacity.
- Opportunities to increase long-haul capacity at expense of short-haul capacity/storage also should be considered.
- Both history and anticipated infrastructure projects strongly suggest that market pricing will be fluid and volatile for the foreseeable future. This makes forecasting the optimal asset mix impossible for any substantial length of time. Thus, PGW is best positioned to continuously evaluate its assets by not committing to long-term contracts, thus maintaining flexibility to shift its portfolio between short-haul and long-haul pipeline capacity and its own LNG capacity.

Adoption of Recommendations and Path Forward

Summit advocates that PGW utilize this report and consider these recommendations, while also establishing processes to more fully monetize its existing capacity assets. In addition, the market dynamics in the Northeast have vastly changed over the past several years and appear to be still evolving rapidly. Thus, Summit recommends a short-term approach to any further contractual asset retention and PGW would be well served to internally re-evaluate its asset portfolio on a regular (annual to every two years) basis to ensure it can take better advantage of any future market developments.

Philadelphia Gas Works

Pennsylvania Public Utility Commission

52 PA Code 53.61, et seq.

Item 53.64(i) Utilities shall comply with the following:

- (1) Thirty days prior to the filing of a tariff reflecting increases or decreases in purchased gas expenses, gas utilities under 66 Pa.C.S. § 1307 (f) recovering expenses under that section shall file a statement for the 12-month period ending 2 months prior to the filing date under 66 Pa.C.S. § 1307(f) as published in accordance with subsection (b) which shall specify:
 - (i) The total revenues received under 66 Pa.C.S. § 1307(a), (b) or (f), including fuel revenues received, whether shown on the bill as 66 Pa.C.S. § 1307(f) as published in accordance with subsection (b) which shall specify:
 - (ii) The total gas expenses incurred.
 - (iii) The difference between the amounts in sub paragraphs (i) and (ii).
 - (iv) Evidence explaining how actual costs incurred differ from the costs allowed under subparagraph (ii).
 - (v) How these costs are consistent with a least cost fuel procurement policy, as required by 66 Pa.C.S. § 1318 (relating to determination of just and reasonable natural gas rates).

Response: Please see attached schedule. Additionally, please refer to Item 53.64(c)(6) for a detailed discussion regarding the company's least cost fuel procurement policy.

**CALENDAR YEAR 2019
PHILADELPHIA GAS WORKS
C-FACTOR RECONCILIATION**

| MONTH | NET COST | TOTAL | C FACTOR | C FACTOR | LOAD BALANCING | LNG SALES GCR | TOTAL | NATURAL GAS | OVER/ |
|--------------|-------------|-------------|----------|---------------|----------------|----------------|-------------------|-------------|-------------------|
| | OF FUEL | GCR | | REVENUE | | | REVENUE | | C FACTOR |
| | 1 | 2 | % of GCR | BILLED | REVENUE | BILLED REVENUE | BILLED | 8 | RECOVERY |
| | | | 3 | 4 = (2 * 3) | 5 | 6 | 7 = (4 + 5 + 6) | | 9 = (7 + 8 - 1) |
| | (\$) | (\$) | | (\$) | (\$) | (\$) | (\$) | (\$) | (\$) |
| JANUARY 2019 | 34,238,287 | 34,724,168 | 105.2% | 36,540,232 | 138,673 | 0 | 36,678,905 | 0 | 2,440,618 |
| FEBRUARY | 25,796,063 | 36,895,962 | 105.2% | 38,825,610 | 138,538 | 0 | 38,964,148 | 0 | 13,168,085 |
| MARCH | 23,390,285 | 31,660,064 | 103.5% | 32,778,131 | 143,923 | 2,232 | 32,924,286 | 0 | 9,534,001 |
| APRIL | 12,274,022 | 17,799,947 | 102.0% | 18,151,356 | 195,309 | 0 | 18,346,665 | 0 | 6,072,643 |
| MAY | 9,844,343 | 8,136,341 | 102.0% | 8,296,969 | 198,928 | 0 | 8,495,897 | 425 | (1,348,021) |
| JUNE | 9,698,951 | 5,326,906 | 101.9% | 5,428,201 | 202,902 | 0 | 5,631,103 | 0 | (4,067,848) |
| JULY | 8,841,227 | 3,930,519 | 101.8% | 4,002,001 | 202,716 | 0 | 4,204,717 | 3,582 | (4,632,928) |
| AUGUST | 8,830,067 | 3,536,088 | 101.8% | 3,600,397 | 204,812 | 0 | 3,805,209 | 350 | (5,024,508) |
| SEPTEMBER | 8,797,006 | 4,228,589 | 100.7% | 4,257,508 | 210,704 | 0 | 4,468,212 | 0 | (4,328,794) |
| OCTOBER | 11,152,594 | 5,066,955 | 99.6% | 5,048,241 | 218,471 | 76,522 | 5,343,234 | 1,115 | (5,808,246) |
| NOVEMBER | 18,933,824 | 14,791,249 | 99.6% | 14,736,621 | 226,215 | 26,059 | 14,988,896 | 0 | (3,944,928) |
| DECEMBER | 23,348,293 | 28,804,748 | 99.4% | 28,623,029 | 214,762 | 8,650 | 28,846,441 | 65 | 5,498,213 |
| Totals | 195,144,962 | 194,901,534 | | 200,288,296 | 2,295,953 | 113,463 | 202,697,712 | 5,537 | 7,558,287 |

**STATEMENT OF RECONCILIATION
UNIVERSAL SERVICES & ENERGY CONSERVATION SURCHARGE
CALENDAR YEAR 2019**

| Month | USC Applicable Volumes | USC Charge | USC Revenue Billed | USC Expenses | Monthly Over/(Under) Recovery | Cumulative Over/(Under) Recovery |
|---------------|------------------------------|---------------|--------------------------|-----------------|-------------------------------------|--|
| December 2018 | | | | | | \$2,495,039 |
| January 2019 | Actual 8,711,091 | \$ 1.1183 | \$ 9,741,613 | \$ 14,467,024 | \$ (4,725,410) | (\$2,230,371) |
| February | Actual 9,204,787 | \$ 1.1183 | \$ 10,293,714 | \$ 13,692,448 | \$ (3,398,734) | (\$5,629,106) |
| March | Actual 7,534,016 | \$ 1.3721 | \$ 10,337,423 | \$ 12,166,981 | \$ (1,829,557) | (\$7,458,663) |
| April | Actual 4,136,961 | \$ 1.6259 | \$ 6,726,284 | \$ 7,020,671 | \$ (294,387) | (\$7,753,050) |
| May | Actual 1,949,563 | \$ 1.6259 | \$ 3,169,794 | \$ 2,605,861 | \$ 563,933 | (\$7,189,117) |
| June | Actual 1,357,417 | \$ 1.4637 | \$ 1,986,799 | \$ 219,227 | \$ 1,767,572 | (\$5,421,545) |
| July | Actual 1,107,930 | \$ 1.3014 | \$ 1,441,885 | \$ (879,074) | \$ 2,320,959 | (\$3,100,586) |
| August | Actual 994,956 | \$ 1.3014 | \$ 1,294,858 | \$ (546,020) | \$ 1,840,879 | (\$1,259,707) |
| September | Actual 1,138,871 | \$ 1.2605 | \$ 1,435,503 | \$ (1,582,662) | \$ 3,018,165 | \$1,758,458 |
| October | Actual 1,358,986 | \$ 1.2195 | \$ 1,657,283 | \$ (21,738) | \$ 1,679,021 | \$3,437,479 |
| November | Actual 3,752,873 | \$ 1.2195 | \$ 4,576,629 | \$ 4,144,212 | \$ 432,417 | \$3,869,896 |
| December | Actual 7,048,852 | \$ 0.9826 | \$ 6,926,202 | \$ 9,196,978 | \$ (2,270,776) | \$1,599,120 |

| USC Expenses | Jan-19 | Feb-19 | Mar-19 | Apr-19 | May-19 | Jun-19 | Jul-19 | Aug-19 | Sep-19 | Oct-19 | Nov-19 | Dec-19 | Total |
|-------------------------------|---------------|---------------|---------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|--------------|--------------|---------------|
| ELIRP Expense | \$ 1,482,413 | \$ 558,324 | \$ 1,025,945 | \$ 593,420 | \$ 791,735 | \$ 801,675 | \$ 594,775 | \$ 1,205,165 | \$ (5,610) | \$ 593,111 | \$ 775,900 | \$ 640,702 | \$ 9,057,555 |
| ELIRP Labor | \$ 15,288 | \$ 15,362 | \$ 19,488 | \$ 17,346 | \$ 13,102 | \$ 14,438 | \$ 13,652 | \$ 15,831 | \$ 22,492 | \$ 10,117 | \$ 23,353 | \$ 14,485 | \$ 194,954 |
| Concervation Incentive Credit | | | | | | | | | | \$ 227,500 | \$ 100 | \$ - | \$ 227,600 |
| CRP Discount | \$ 11,588,988 | \$ 11,907,633 | \$ 9,811,597 | \$ 5,175,059 | \$ 624,546 | \$ (1,514,700) | \$ (2,382,929) | \$ (2,602,428) | \$ (2,403,563) | \$ (1,749,547) | \$ 2,348,336 | \$ 7,501,644 | \$ 38,304,636 |
| CRP Forgiveness | \$ 812,018 | \$ 637,832 | \$ 836,884 | \$ 934,174 | \$ 1,010,977 | \$ 823,621 | \$ 823,224 | \$ 769,330 | \$ 732,550 | \$ 803,371 | \$ 766,558 | \$ 653,112 | \$ 9,603,650 |
| Senior Citizen Discount | \$ 568,317 | \$ 573,297 | \$ 473,067 | \$ 300,673 | \$ 165,501 | \$ 94,193 | \$ 72,204 | \$ 66,082 | \$ 71,469 | \$ 93,710 | \$ 229,965 | \$ 387,035 | \$ 3,095,512 |
| Bad Debt Expense Offset* | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total | \$ 14,467,024 | \$ 13,692,448 | \$ 12,166,981 | \$ 7,020,671 | \$ 2,605,861 | \$ 219,227 | \$ (879,074) | \$ (546,020) | \$ (1,582,662) | \$ (21,738) | \$ 4,144,212 | \$ 9,196,978 | \$ 60,483,907 |

| CRP Participation | | | | | | | | | | | | |
|--|---------------|---------------|--------------|--------------|------------|----------------|----------------|----------------|----------------|----------------|--------------|--------------|
| Rate Case Participation Rate | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 |
| Actual Participation Rate* | 52,051 | 52,459 | 54,455 | 54,806 | 54,814 | 54,716 | 53,466 | 53,445 | 52,717 | 53,395 | 53,177 | 54,040 |
| CRP Under(Over) Participation | 7,949 | 7,541 | 5,545 | 5,194 | 5,186 | 5,284 | 6,534 | 6,555 | 7,283 | 6,605 | 6,823 | 5,960 |
| Average Shortfall Per CRP Participant | | | | | | | | | | | | |
| CRP Discount | \$ 11,588,988 | \$ 11,907,633 | \$ 9,811,597 | \$ 5,175,059 | \$ 624,546 | \$ (1,514,700) | \$ (2,382,929) | \$ (2,602,428) | \$ (2,403,563) | \$ (1,749,547) | \$ 2,348,336 | \$ 7,501,644 |
| Actual Participation Rate | 52,051 | 52,459 | 54,455 | 54,806 | 54,814 | 54,716 | 53,466 | 53,445 | 52,717 | 53,395 | 53,177 | 54,040 |
| Average Shortfall per CRP Participant | \$ 223 | \$ 227 | \$ 180 | \$ 94 | \$ 11 | \$ (28) | \$ (45) | \$ (49) | \$ (46) | \$ (33) | \$ 44 | \$ 139 |
| Shortfall* | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Bad Debt Expense Offset* 7.5% | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

*Bad Debt Expense Offset Applicable When Actual CRP Participation Exceeds 60,000

Docket No. R-2020-XXXXXXX

Item 53.65 (1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (1)

The costs of the affiliated gas, transportation or storage as compared to the average market price of other gas, transportation or storage and the price of other sources of gas, transportation and storage.

Response:

PGW has no affiliates, see response to 53.64(c)(1) for price of gas, transportation and storage.

Docket No. R-2020-XXXXXXX

Item 53.65 (2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (2)

Estimates of the quantity of gas, transportation or storage available to the utility from all sources.

Response:

PGW has no affiliates and provided is a summary of all transport and storage.

Philadelphia Gas Works
Gas Supply Group – Supply and Transportation
Abstract of Natural Gas Contracts

This document contains confidential information for the use of the Gas Operations personnel only. It is important to note that this is a brief summary of the terms and conditions of our contracts. The pipeline tariffs and contract files should be referenced for complete information.

PHILA.GAS WORKS

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TRANSPORTATION CONTRACTS

Transco FT (Firm Transportation)
Transco PSFT (Peaking Service Firm Transportation)
Transco IT (Interruptible Transportation)
Tetco CDS (Comprehensive Delivery Service)
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PHILA.GAS WORKS

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Dominion GSSTE

Tetco SS1

Tetco SS1

Transco GSS

Transco S2

Transco WSS

Transco ES

Transco ES

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #16 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expires on 03/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #25 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 03/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #28 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 20,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 20,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 03/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #26 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 15,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 15,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 03/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #24 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT2 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 03/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #16 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #26 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #28 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Apr-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #24 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Apr-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #24 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT2 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #24 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | 1 Year |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 20,000 DT |
| Availability: | Year Round |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | None |
| Nomination & Scheduling: | Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month. |
| Other Terms & Conditions: | Pricing for each day is priced at <i>Platts Gas Daily</i> midpoint index. |
| Most Recent Negotiation: | Contract expires on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #3 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | 1 Year |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 15,000 DT |
| Availability: | Year Round |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | None |
| Nomination & Scheduling: | Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month. |
| Other Terms & Conditions: | Pricing for each day is priced at <i>Platts Gas Daily</i> midpoint index. |
| Most Recent Negotiation: | Contract expires on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Tetco Gas Supply Contract #5 |
| Delivery Pipeline & Contract #: | Tetco |
| Associated Transportation Contract: | Tetco FT and CDS |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 02/01/2019 |
| Contract Expiration Date: | 02/28/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Feb. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Tetco rules. |
| Other Terms & Conditions: | Fixed price for the month was negotiated. |
| Most Recent Negotiation: | Contract expired on 02/28/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #14 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #6 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #32 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #29 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #37 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 05/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 3,500 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 3,500 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #37 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 05/01/2019 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 3,736 DT per Day Apr.-Oct. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 3,736 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 10/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #37 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Summer Supply |
| Initial Contract Date: | 04/01/2019 |
| Contract Expiration Date: | 04/30/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 9,000 DT per Day Apr. |
| Availability: | Summer Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 9,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 04/30/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #7 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 3/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #6 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 03/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #29 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 5,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or default to an index. |
| Most Recent Negotiation: | Contract expired on 3/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #14 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or default to an index. |
| Most Recent Negotiation: | Contract expired on 3/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #2 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 3/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #30 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 03/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Nov.-Mar. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for each month can be negotiated or defaults to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired on 3/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|---|
| Name & Type of Service: | Transco Gas Supply Contract #5 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 12/01/2018 |
| Contract Expiration Date: | 12/31/2018 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Dec. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for the month defaulted to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired 12/31/2018. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|---|
| Name & Type of Service: | Transco Gas Supply Contract #6 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract 1003691 |
| Contract Term: | Winter Supply |
| Initial Contract Date: | 01/01/2019 |
| Contract Expiration Date: | 01/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 10,000 DT per Day Jan. |
| Availability: | Winter Supply Contract |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | 10,000 DT per Day |
| Nomination & Scheduling: | Firm must take contract. Nominations subject to Transco rules. |
| Other Terms & Conditions: | Pricing for the month defaulted to <i>Inside FERC's</i> First of Month index. |
| Most Recent Negotiation: | Contract expired 01/31/2019. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #34 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract # 1003691 |
| Contract Term: | 1 Year |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,000 DT per Day |
| Availability: | Year Round |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | None |
| Nomination & Scheduling: | 24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month. |
| Other Terms & Conditions: | Pricing for each day is priced at <i>Platts Gas Daily</i> midpoint index. |
| Most Recent Negotiation: | Contract expired 10/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #30 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract # 1003691 |
| Contract Term: | 1 Year |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 20,000 DT per Day |
| Availability: | Year Round |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | None |
| Nomination & Scheduling: | 24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month. |
| Other Terms & Conditions: | Pricing for each day is priced at <i>Platts Gas Daily</i> midpoint index. |
| Most Recent Negotiation: | Contract expired 10/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

| | |
|-------------------------------------|--|
| Name & Type of Service: | Transco Gas Supply Contract #36 |
| Delivery Pipeline & Contract #: | Transco |
| Associated Transportation Contract: | Transco FT Contract # 1003691 |
| Contract Term: | 1 Year |
| Initial Contract Date: | 11/01/2018 |
| Contract Expiration Date: | 10/31/2019 |
| Quality of Service: | Firm |
| Daily Maximum: | 20,000 DT per Day |
| Availability: | Year Round |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | None |
| Nomination & Scheduling: | 24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month. |
| Other Terms & Conditions: | Pricing for each day is priced at <i>Platts Gas Daily</i> midpoint index. |
| Most Recent Negotiation: | Contract expired 10/31/19. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Transportation Contract

| | |
|-------------------------------------|---|
| Name & Type of Service: | Transco FT |
| Delivery Pipeline & Contract #: | Transco FT 1003691 |
| Associated Transportation Contract: | Transco Supply Contracts, WSS, ES, and Spot Supply contracts. |
| Contract Term: | 13 Years |
| Initial Contract Date: | 02/01/1992 |
| Contract Expiration Date: | 03/31/2005 |
| Quality of Service: | Firm |
| Daily Maximum: | 165,212 DT |
| Availability: | Year Round |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | N/A |
| Most Recent Negotiation: | Contract is now in the evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Transportation Contract

| | |
|-------------------------------------|---|
| Name & Type of Service: | Transco Peaking Service FT |
| Delivery Pipeline & Contract #: | Transco FT 1005001 |
| Associated Transportation Contract: | Transco Supply Contracts, WSS, ES, and Spot Supply contracts. |
| Contract Term: | 13 Years |
| Initial Contract Date: | 02/01/1992 |
| Contract Expiration Date: | 03/31/2005 |
| Quality of Service: | Firm |
| Daily Maximum: | 1,967 DT |
| Availability: | Winter Peaking Dec-Feb |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | N/A |
| Most Recent Negotiation: | Contract is now in the evergreen state. |

PHILA.GAS WORKS
PGW NATURAL GAS CONTRACT INFORMATION
Interruptible Transportation Contract

| | |
|-------------------------------------|---|
| Name & Type of Service: | Transco Interruptible Transportation |
| Delivery Pipeline & Contract #: | Transco IT 1002427 |
| Associated Transportation Contract: | Transco Supply Contracts, WSS, ES, and Spot Supply contracts. |
| Contract Term: | 13 Years |
| Initial Contract Date: | 02/01/1992 |
| Contract Expiration Date: | 03/31/2005 |
| Quality of Service: | Firm |
| Daily Maximum: | See Transco Tariff |
| Availability: | See Transco Tariff |
| Fuel (%): | Subject to Transco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | N/A |
| Most Recent Negotiation: | Contract is now in the evergreen state. |

PHILA.GAS WORKS
NATURAL GAS CONTRACT INFORMATION
Comprehensive Delivery Service

| | |
|-------------------------------------|---|
| Name & Type of Service: | Tetco CDS |
| Delivery Pipeline & Contract #: | Tetco #800232 |
| Associated Transportation Contract: | Tetco Supply Contracts, Spot Supply contracts. |
| Contract Term: | 2.8 Years |
| Initial Contract Date: | 12/15/1998 |
| Contract Expiration Date: | 10/31/2001 |
| Quality of Service: | Firm |
| Daily Maximum: | 75,000 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract is now in the evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

| | |
|-------------------------------------|---|
| Name & Type of Service: | Tetco FT 1 |
| Delivery Pipeline & Contract #: | Tetco #800233 |
| Associated Transportation Contract: | Tetco Supply Contracts, Spot Supply contracts. |
| Contract Term: | 2.8 Years |
| Initial Contract Date: | 12/15/1998 |
| Contract Expiration Date: | 10/31/2001 |
| Quality of Service: | Firm |
| Daily Maximum: | 23,822 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract is now in the evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

| | |
|-------------------------------------|---|
| Name & Type of Service: | Tetco FT 1 |
| Delivery Pipeline & Contract #: | Tetco #800514 |
| Associated Transportation Contract: | Tetco Supply Contracts & Spot Supply contracts. |
| Contract Term: | 7.8 Years |
| Initial Contract Date: | 12/15/1996 |
| Contract Expiration Date: | 10/31/2003 |
| Quality of Service: | Firm |
| Daily Maximum: | 18,000 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION Firm Transportation

| | |
|-------------------------------------|---|
| Name & Type of Service: | Tetco FT 1 |
| Delivery Pipeline & Contract #: | Tetco #800515 |
| Associated Transportation Contract: | Tetco Supply Contracts & Spot Supply contracts. |
| Contract Term: | 10.8 Years |
| Initial Contract Date: | 12/15/1996 |
| Contract Expiration Date: | 10/31/2007 |
| Quality of Service: | Firm |
| Daily Maximum: | 18,000 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

| | |
|---------------------------------|------------------------------|
| Name & Type of Service: | Tetco FTS 2 |
| Delivery Pipeline & Contract #: | Tetco #800232 |
| Associated Contract: | |
| Contract Term: | 8.75 Years |
| Initial Contract Date: | 06/01/1993 |
| Contract Expiration Date: | 03/31/2002 |
| Quality of Service: | Firm |
| Daily Maximum: | 5,394 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

| | |
|---------------------------------|------------------------------|
| Name & Type of Service: | Tetco FTS 7 |
| Delivery Pipeline & Contract #: | Tetco #331725 |
| Associated Contract: | Dominion GSS |
| Contract Term: | 10 Years |
| Initial Contract Date: | 08/07/1996 |
| Contract Expiration Date: | 03/31/2005 |
| Quality of Service: | Firm |
| Daily Maximum: | 7,788 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

| | |
|---------------------------------|------------------------------|
| Name & Type of Service: | Tetco FTS 8 |
| Delivery Pipeline & Contract #: | Tetco #331822 |
| Associated Contract: | Dominion GSS |
| Contract Term: | 10 Years |
| Initial Contract Date: | 08/07/1996 |
| Contract Expiration Date: | 03/31/2005 |
| Quality of Service: | Firm |
| Daily Maximum: | 25,709 DT per Day |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen state. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Interruptible Transportation

| | |
|---------------------------------|-------------------------------|
| Name & Type of Service: | Tetco IT |
| Delivery Pipeline & Contract #: | Tetco #710468 |
| Associated Contract: | Supply Contracts, Spot Supply |
| Contract Term: | 1 Year |
| Initial Contract Date: | 04/01/1993 |
| Contract Expiration Date: | 03/31/1994 |
| Quality of Service: | Interruptible |
| Daily Maximum: | See Tetco Tariff |
| Availability: | See Tetco Tariff |
| Fuel (%): | Subject to Tetco fuel rates |
| Minimum Take Level: | N/A |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | See Tetco Tariff |
| Most Recent Negotiation: | Contract in Evergreen status. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: Dominion GSS Storage Service

Delivery Pipeline & Contract #: Tetco

Associated Contract: Tetco FTS 7 Contract#331725
Tetco FTS 8 Contract#331822

Contract Term: 13 Years

Initial Contract Date: 09/30/1993

Contract Expiration Date: 03/31/2006

Quality of Service: Firm (Unbundled)

Daily Maximum Withdrawal: 34,047 DT Inventory % W/D Rate

| | |
|------|--------|
| >35% | 34,047 |
| <35% | 31,323 |
| <16% | 23,833 |
| <10% | 21,450 |

Availability (Withdrawal/Injection): Year round

Daily Maximum Injection: 21,772 DT <50%
18,313 DT >50%

Maximum Storage Quantity: 3,918,971 DT

Fuel (%): 1.95 % injection

Nomination & Scheduling: GISB Standards.

Within day nomination changes may be accomplished as long as both Tetco and Dominion parties are notified and can confirm.

Other Terms & Conditions: Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: SS1

Delivery Pipeline & Contract #: Tetco Contract #400121

Associated Contract: None

Contract Term: 19 Years

Initial Contract Date: 06/01/1993

Contract Expiration Date: 04/30/2012

Quality of Service: Firm (Bundled)

Daily Maximum Withdrawal: 44,118 DT Inventory % W/D Rate
100%>20% 44,118
<20%>=10% 36,764
<10%>= 0% 29,413

Availability (Withdrawal/Injection): Year round

Daily Maximum Injection: 13,606 DT

Maximum Storage Quantity: 2,647,080 DT

Fuel (%) Injection & Withdrawal: Subject to Tetco Tariff Revisions

Nomination & Scheduling: GISB Standards.

Other Terms & Conditions: Storage is a No Notice Service

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: SS1

Delivery Pipeline & Contract #: Tetco Contract #400209

Associated Contract: None

Contract Term: 19 Years

Initial Contract Date: 06/01/1993

Contract Expiration Date: 04/30/2012

Quality of Service: Firm (Bundled)

Daily Maximum Withdrawal: 20,847 DT Inventory % W/D Rate
100%>20% 20,847
<20%>=10% 17,372
<10%>= 0% 13,899

Availability (Withdrawal/Injection): Year round

Daily Maximum Injection: 12,656 DT

Maximum Storage Quantity: 2,462,120 DT

Fuel (%) Injection & Withdrawal: Subject to Tetco Tariff Revisions

Nomination & Scheduling: GISB Standards.

Other Terms & Conditions: Storage is a No Notice Service

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: GSS

Delivery Pipeline & Contract #: Transco Contract #1000791

Associated Contract: None

Contract Term: 10 Years

Initial Contract Date: 07/09/2012

Contract Expiration Date: 03/31/2023

Quality of Service: Firm (Bundled)

Daily Maximum Withdrawal: 61,567 DT

| <u>Inventory %</u> | | <u>W/D Rate</u> |
|--------------------|-------|-----------------|
| 100% | >35% | 61,567 |
| 35% | >=20% | 60,951 |
| 20% | >= 7% | 45,560 |
| 7% | >=0% | 33,862 |

Availability (Withdrawal/Injection): Year round

Daily Maximum Injection:

| | |
|------|--------|
| <50% | 22,910 |
| >50% | 19,270 |

Maximum Storage Quantity: 4,123,733 DT

Fuel (%) Injection : Subject to Transco Tariff Revisions

Nomination & Scheduling: GISB Standards.

Other Terms & Conditions: Storage is a No Notice Service

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: S 2

Delivery Pipeline & Contract #: Transco Contract #1000943

Associated Contract: None

Contract Term: 5 Years

Initial Contract Date: 04/16/1996

Contract Expiration Date: 04/15/2001

Quality of Service: Firm (Bundled)

Daily Maximum Withdrawal: 5,191 DT Inventory % W/D Rate
100%>20% 5,191
20%>=10% 4,238
10%>= 0% 3,482

Availability (Withdrawal/Injection): Injection from April 16 to Nov 15
Withdrawal from Nov 16 to April 15

Daily Maximum Injection: 3,900 DT

Maximum Storage Quantity: 466,548 DT

Fuel (%) Injection & Withdrawal: Subject to Transco Tariff Revisions

Nomination & Scheduling: GISB Standards.

Other Terms & Conditions: Contract is now in the evergreen state.
Storage is a No Notice Service.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service: WSS

Delivery Pipeline & Contract #: Transco Contract #1038582

Associated Contract: Transco 1003691 & 1005001

Contract Term: 1 Year

Initial Contract Date: 04/01/2001

Contract Expiration Date: 03/31/2002

Quality of Service: Firm (Unbundled)

Daily Maximum Withdrawal: 35,115 Inventory % W/D Rate

| | |
|-----------|--------|
| 100%>80% | 35,115 |
| 80%>=60% | 31,471 |
| 60%>= 40% | 28,512 |
| 40%>=20% | 23,828 |
| 20%>=0 % | 19,283 |

Availability (Withdrawal/Injection): Year Round

Daily Maximum Injection: <50% 18,533
>50% 15,588

Maximum Storage Quantity: 3,335,909 DT

Fuel (%) Injection : Subject to Transco Tariff Revisions

Nomination & Scheduling: GISB Standards.

Other Terms & Conditions: Storage converted to Part 284G. Contract is now in the evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

| | |
|--------------------------------------|---|
| Name & Type of Service: | ES |
| Delivery Pipeline & Contract #: | Transco Contract #1010416 |
| Associated Contract: | Transco 1003691 & 1005001 |
| Contract Term: | Contract Pending |
| Initial Contract Date: | N/A |
| Contract Expiration Date: | 10/31/2016 |
| Quality of Service: | Firm (Unbundled) |
| Daily Maximum Withdrawal: | 38,327 DT non-ratcheted |
| Availability (Withdrawal/Injection): | Year Round |
| Daily Maximum Injection: | 3,198 DT |
| Maximum Storage Quantity: | 323,416 DT |
| Fuel (%) Injection : | Subject to Transco Tariff Revisions |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | Storage contract 1010416 has been abandoned back to the pipeline. |

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

| | |
|--------------------------------------|---|
| Name & Type of Service: | ES |
| Delivery Pipeline & Contract #: | Transco Contract #1039085 |
| Associated Contract: | Transco 1003691 & 1005001 |
| Contract Term: | June 1, 2001 through March 31, 2005 |
| Initial Contract Date: | 06/01/2001 |
| Contract Expiration Date: | 03/31/2016 |
| Quality of Service: | Firm (Unbundled) |
| Daily Maximum Withdrawal: | 52,077 DT non-ratcheted |
| Availability (Withdrawal/Injection): | Year Round |
| Daily Maximum Injection: | 4,346 DT |
| Maximum Storage Quantity: | 439,455 DT |
| Fuel (%) Injection : | Subject to Transco Tariff Revisions |
| Nomination & Scheduling: | GISB Standards. |
| Other Terms & Conditions: | Storage contract 1039085 has been abandoned back to the pipeline. |

Docket No. R-2020-XXXXXXX

Item 53.65 (3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (3)

Efforts made by the utility to obtain gas, transportation or storage from nonaffiliated interests.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Docket No. R-2020-XXXXXXX

Item 53.65 (4)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (4)

The specific reasons why the utility has purchased gas, transportation or storage from an affiliated interest and demonstration that the purchases are consistent with a least cost fuel procurement policy.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Philadelphia Gas Works

Pennsylvania Public Utility Commission

52 Pa. Code §53.61, et seq.

Item 53.65 (5)

The sources and amounts of gas, transportation or storage, which have been withheld from the market by the utility or, affiliated interest and the reasons why the gas, transportation or storage has been withheld?

Response:

PGW has no affiliates.

PGW operates two LNG Peak shaving facilities with a total usable storage capacity of 3.9 Bcf, 18.69 percent of PGW's total storage capacity. When pipeline and underground storage deliveries are insufficient to meet sendout requirements, LNG storage withdrawals will be considered. These LNG storage withdrawals are based upon incremental costs, weather forecasts, inventory balances, distribution system requirements, and other variables such as plant maintenance and operating requirements all of which can influence the vaporization and liquefaction rates of PGW's LNG facilities.

PGW used a total of 1,912,746 Mcf of LNG to meet city sendout requirements during fiscal year 2019.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(1)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(1) The utility's participation in rate proceedings before the Federal Energy Regulatory Commission which affect the utility's gas costs.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(2)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(2) The utility's efforts to negotiate favorable contracts with gas suppliers and to renegotiate existing contracts with gas suppliers or take legal actions necessary to relieve the utility from existing contract terms which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(3)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(3) The utility's efforts to secure lower cost gas supplies both within and outside of the Commonwealth, including the use of transportation arrangements with pipelines and other gas distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(4)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(4) The sources and amounts of all gas supplies which have been withheld or have been caused to be withheld from the market by the utility and the reasons why such gas is not to be utilized.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(1)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(1) Efforts made by the utility to obtain gas supplies from nonaffiliated interests.

Response:

Please refer to Item 53.65 (3) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(2)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(2) The specific reasons why the utility has purchased gas supplies from an affiliated interest and demonstration that such purchases are consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (4) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(3)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(3) The sources and amounts of all gas supplies which have been withheld from the market by the utility or any affiliated interest and the reasons why such gas is not being utilized.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (c)(1)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(1) The projected peak day and seasonal requirements of the firm customers utilizing the distribution system of the natural gas distribution company during the 12-month projected period specified in section 1307(f)(1). Where operationally required, the design peak day requirements shall be specified for discrete segments of each natural gas distribution system.

Response:

Please refer to Item 53.64(c)(13) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (c)(2)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(2) The transportation capacity, storage, peaking or on-system production that ensures deliverability of the natural gas supplies necessary to meet such projected period peak day and seasonal requirements.

Response:

PGW does not maintain a specific document entitled a Reliability Plan, however, all of the components that would be contained in such a document are prepared by PGW and are contained in this filing in Items 53.64 (c)(1), 53.64 (c)(3), 53.64 (c)(5), 53.64 (c)(6), 53.64 (c)(10), 53.64 (c)(12), 53.64 (c)(13), 53.64 (c)(14), 53.65 (2) and 53.65 (5).

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Item 1317 (d)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (d)

Supply plans.--As part of its filing under section 1307(f), a natural gas distribution company shall file a proposed plan with the commission for acquisition or receipt of natural gas supplies.

Response:

Please refer to Item 53.64(c)(1) and 53.65 (2) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(1)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of \$40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(1) The utility has fully and vigorously represented the interests of its ratepayers in proceedings before the Federal Energy Regulatory Commission.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(2)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of \$40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(2) The utility has taken all prudent steps necessary to negotiate favorable gas supply contracts and to relieve the utility from terms in existing contracts with its gas suppliers which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(3)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of \$40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(3) The utility has taken all prudent steps necessary to obtain lower cost gas supplies on both short-term and long-term bases both within and outside the Commonwealth, including the use of gas transportation arrangements with pipelines and other distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(4)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of \$40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(4) The utility has not withheld from the market or caused to be withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(1)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(1) That the utility has fully and vigorously attempted to obtain less costly gas supplies on both short-term and long-term bases from nonaffiliated interests.

Response:

Please refer to Item 53.65 (3) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(2)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(2) That each contract for the purchase of gas from its affiliated interest is consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (4) contained in this filing.

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(3)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(3) That neither the utility nor its affiliated interest has withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Docket No. R-2020-XXXXXXX

Item 1318 (c)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (c)

Shut-in gas; special rule.--In determining whether a gas utility has purchased the least costly natural gas available, the commission shall consider as available to the utility any gas supplies that reasonably could have been brought to market during the relevant period but which were voluntarily withheld from the market by the utility or an affiliated interest of the utility.

Response:

Please refer to Item 53.65 (5) contained in this filing.