

I&E Statement No. 1
Witness: John Zalesky

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Direct Testimony

of

John Zalesky

Bureau of Investigation and Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
3 **ADDRESS.**

4 A. My name is John Zalesky. I am a Fixed Utility Financial Analyst in the Technical
5 Division of the Pennsylvania Public Utility Commission’s (Commission or PUC)
6 Bureau of Investigation and Enforcement (I&E). My business address is
7 Commonwealth Keystone Building, 400 North Street, Harrisburg, PA 17120.

8
9 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL**
10 **BACKGROUND.**

11 A. My education and professional background are set forth in Appendix A, which is
12 attached.

13
14 **Q. DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

15 A. I&E is responsible for protecting the public interest in rate proceedings. I&E’s
16 analysis in this proceeding is based on its responsibility to represent the public
17 interest. This responsibility requires balancing the interests of ratepayers, the
18 regulated utility, and the regulated community as a whole.

19
20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 A. The purpose of my testimony is to review the base rate filing of Columbia Gas of
22 Pennsylvania, Inc. (Columbia or Company) and make recommended adjustments

1 to the Company's proposed operating and maintenance (O&M) expenses for the
2 fully projected future test year (FPFTY) ending December 31, 2021.

3
4 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

5 A. Yes. I&E Exhibit No. 1 contains schedules that support my direct testimony.

6
7 **Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS.**

8 A. The following table summarizes my recommended adjustments:

9

| | Company Claim | I&E Recommended Allowance | I&E Adjustment |
|--|--------------------------|--|-------------------------------|
| Rate Case Expense | \$1,060,000 | \$636,000 | (\$424,000) |
| Labor Expense | \$39,527,732 | \$36,516,506 | (\$3,011,226) |
| Other Employee Benefits | \$7,779,000 | \$7,278,032 | (\$500,968) |
| Incentive Compensation | \$2,267,000 | \$1,893,251 | (\$373,749) |
| FICA Taxes | \$3,001,823 | \$2,758,704 | (\$243,119) |
| PUC, OCA, OSBA Fees | \$2,262,000 | \$1,805,024 | (\$456,976) |
| Total O&M Expense Adjustments | | | <u>(\$5,010,038)</u> |

10
11 **SUMMARY OF I&E OVERALL POSITION**

12 **Q. WHAT IS I&E'S TOTAL RECOMMENDED REVENUE REQUIREMENT?**

13 A. I&E's total recommended revenue requirement for the Company is \$649,159,707.

14 This recommended revenue requirement represents an increase of \$76,390,133 to
15 the Company's claimed present rate revenues of \$572,769,574. This total

1 recommended allowable increase incorporates my adjustments made in this
 2 testimony and those made in the testimony of I&E witnesses Christopher Keller.¹

3 A calculation of the I&E recommended revenue requirement is shown
 4 below:

| Co umb a Gas of PA Inc R-2020-3018835 | TABLE I | | | | |
|--|---------------|-----------------------------|---------------|------------|---------------|
| | INCOME | | SUMMARY | | |
| | 12/31/21 | INVESTIGATION & ENFORCEMENT | | | |
| | Proforma | [-----] | | | |
| | Present Rates | Adjustments | Present Rates | Allowances | Proposed |
| | \$ | \$ | \$ | \$ | \$ |
| Operating Revenue | 572,769,574 | 0 | 572,769,574 | 76,390,133 | 649,159,707 |
| Deductons: | | | | | |
| O&M Expenses | 337,209,019 | -4,766,919 | 332,442,100 | 867,311 | 333,309,411 |
| Deprec at on | 98,832,789 | 0 | 98,832,789 | | 98,832,789 |
| Taxes, Other | 3,829,403 | -243,119 | 3,586,284 | 0 | 3,586,284 |
| Income Taxes: | | | | | |
| Current State | 42,372 | 220,442 | 262,814 | 3,323,004 | 3,585,818 |
| Current Federa | 16,469,586 | 1,005,815 | 17,475,401 | 15,161,962 | 32,637,363 |
| Deferred Taxes | 0 | 0 | 0 | | 0 |
| ITC | -257,415 | 0 | -257,415 | | -257,415 |
| Tota Deductons | 456,125,754 | -3,783,781 | 452,341,973 | 19,352,277 | 471,694,250 |
| Income Ava ab e | 116,643,820 | 3,783,781 | 120,427,601 | 57,037,856 | 177,465,457 |
| Measure of Va ue | 2,401,427,019 | 0 | 2,401,427,019 | 0 | 2,401,427,019 |
| Rate of Return | 4.86% | | 5.01% | | 7.39% |

5

¹ I&E Statement No. 2.

1 **RATE CASE EXPENSE**

2 **Q. BRIEFLY EXPLAIN THE NATURE AND TYPES OF EXPENDITURES**
3 **TYPICALLY ALLOWED AS A PART OF A REGULATED UTILITY’S**
4 **OVERALL RATE CASE EXPENSE.**

5 A. The nature and types of individual expenditures that comprise a utility’s allowable
6 claim for rate case expense are those directly incurred to compile, present, and
7 defend a utility’s request for a base rate increase before the Commission. The
8 actual expenditures and estimated costs typically found in an allowable rate case
9 expense claim include legal fees for outside counsel, outside consultants, and the
10 cost of printing, document assembly, and postage.

11
12 **Q. HOW HAS THE COMMISSION TRADITIONALLY TREATED RATE**
13 **CASE EXPENSE FOR RATEMAKING PURPOSES?**

14 A. The Commission has historically stated that it considers prudently incurred rate
15 case expense as an ongoing expense, occurring at irregular intervals, related to the
16 rendering of utility service. The Commission has also cited the importance of
17 considering the involved utility’s history regarding the frequency of rate case
18 filings as an essential element in determining the normalized level of rate case
19 expense for ratemaking purposes.

20
21 **Q. HOW IS THE FREQUENCY OF RATE CASE FILINGS DETERMINED?**

22 A. The frequency is determined by computing the average number of months

1 between the filing dates of the utility's previous rate cases.

2

3 **Q. WHAT IS THE COMPANY'S CLAIM FOR RATE CASE EXPENSE?**

4 A. The Company's projected total rate case expense of \$1,060,000 is normalized
5 over 12 months, resulting in an annual rate case expense claim of \$1,060,000.²

6

7 **Q. WHAT IS THE BASIS OF THE COMPANY'S CLAIM?**

8 A. The Company's claim is based on estimated expenses for this case that reflects
9 costs to be incurred for its capital witness, depreciation witness, outside counsel,
10 and incremental costs associated with legal notices, employee expenses and
11 duplicating. The Company proposes to normalize the entire rate case expense
12 over 12 months because the Company plans on filing annual base rate cases in the
13 near future.³

14

15 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

16 A. No.

17

18 **Q. WHAT IS YOUR RECOMMENDATION FOR RATE CASE EXPENSE?**

19 A. I recommend that the Company's rate case expense be normalized over a period of
20 20 months resulting in an annual expense of \$636,000 ($(\$1,060,000 \div 20 \text{ months})$)

² Columbia Exhibit No. 104, Schedule 1, p. 4 and Schedule 2, p. 15.

³ I&E Exhibit No. 1, Schedule 1, p. 1.

1 x 12 months), or a reduction of \$424,000 (\$1,060,000 - \$636,000) to the
2 Company's claim.

3
4 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

5 A. I disagree with the Company's claimed 12-month normalization period, as it is not
6 supported by the Company's historic filing frequency. The proposed
7 normalization period fails to properly rely upon historic data, and the Company
8 did not provide support for a 12-month normalization period. As such, the
9 proposed normalization period should be rejected.

10 In contrast to the Company's claimed 12-month normalization period, I
11 recommend a 20-month normalization period. The normalization period of 20
12 months is a reasonable interval given the Company's actual base rate filing history
13 over the most recent four base rate cases. Based on the following data, the
14 Company has an average historic base rate case filing frequency of every 20
15 months when considering base rate cases filed since 2015:⁴

16

| Docket No. | Date Filed | Filing Interval |
|-------------------|-------------------|------------------------|
| R-2020-3018835 | April 24, 2020 | 25 months |
| R-2018-2647577 | March 16, 2018 | 24 months |
| R-2016-2529660 | March 18, 2016 | 12 months |
| R-2015-2468056 | March 19, 2015 | |

⁴ I&E Exhibit No. 1, Schedule 2, p. 1.

1 Using the Company's three most recent base rate case filing dates, the average
2 interval is 20 months ((25 mo. + 24 mo. + 12 mo.) ÷ 3 intervals). The Company's
3 requested 12-month recovery period is unsupported. Thus, a 12-month
4 normalization period should be rejected, as it would result in an unreasonable
5 increase in rates.

6
7 **LABOR EXPENSE**

8 **Q. WHAT IS INCLUDED IN THE COMPANY'S CLAIM FOR LABOR**
9 **EXPENSE?**

10 A. The Company's labor claim includes annualized gross wages for regular payroll,
11 overtime, premium pay, and net affiliate labor transferred.⁵

12
13 **Q. WHAT IS THE COMPANY'S CLAIM FOR LABOR EXPENSE?**

14 A. The Company's FPFTY claim for labor expense is \$39,527,732.⁶

15
16 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

17 A. The Company started with its HTY labor expense for 763 employees and made
18 budget adjustments and ratemaking adjustments for determining FTY and FPFTY
19 labor expense.⁷ The budget and ratemaking adjustments relate to budgeted merit

⁵ Columbia SDR GAS-RR-026, Attachment A.

⁶ Columbia Exhibit No. 104, Schedule 1, p. 4 and SDR-GAS-RR-026, Attachment A.

⁷ Columbia Statement No. 4, p. 9.

1 pay increases, projected increases in payroll expense for additional employees, and
2 annualization of merit pay increases in the FTY and FPFTY.⁸

3
4 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

5 A. No.

6
7 **Q. WHAT DO YOU RECOMMEND?**

8 A. I recommend an allowance of \$36,516,506 for labor expense, or a reduction of
9 \$3,011,226 (\$39,527,732 - \$36,516,506) to the Company's claim. My
10 recommendation is based on following two adjustments, which are discussed
11 below: (1) an annualization adjustment and (2) an employee vacancy adjustment.

12
13 **Annualization Adjustment**

14 **Q. EXPLAIN THE ANNUALIZATION ADJUSTMENT.**

15 A. The Company's FPFTY labor expense claim includes a budgeted adjustment for
16 merit pay increases to become effective in different months throughout the FPFTY,
17 and it also includes a ratemaking annualization adjustment for including a full
18 year's pay increase in the 12-month period.

⁸ Columbia Statement No. 9, pp. 8-9; Exhibit No. 104, Schedule 2, p. 1; and Schedule 10, pp. 1-2; and SDR-GAS-RR-026, Attachment A.

1 **Q. WHAT IS THE COMPANY'S CLAIM FOR THE PAY INCREASE**
2 **ANNUALIZATION?**

3 A. The Company claimed a ratemaking adjustment of \$497,691 for pay increase
4 annualization in the FPFTY.⁹

5
6 **Q. DO YOU AGREE WITH THE COMPANY'S PAY INCREASE**
7 **ANNUALIZATION ADJUSTMENT?**

8 A. No.

9
10 **Q. WHAT DO YOU RECOMMEND?**

11 A. I recommend disallowance of the Company's entire as-filed claim of \$497,691 for
12 the pay increase annualization adjustment as included in the FPFTY labor expense
13 claim.

14
15 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

16 A. By annualizing FPFTY pay increases, the Company is claiming the full labor
17 expense that would occur if the variably occurring pay increases all occurred on
18 day one of the FPFTY. A revenue requirement calculated on this basis would
19 recover, dollar-for-dollar, an expense level for labor expense that will never be
20 reached in the FPFTY. Thus, the annualization adjustment would result in an

⁹ Columbia Exhibit 104, Schedule 1, p. 4 and Schedule 2, p. 1.

1 unfair and unreasonable burden on ratepayers by establishing an expense recovery
2 in its revenue requirement that is not reflective of actual FPFTY expenses.

3
4 **Employee Vacancy Adjustment**

5 **Q. WHAT IS THE EMPLOYEE VACANCY ADJUSTMENT?**

6 A. Normally, companies have a certain level of employee vacancies on a day-to-day
7 operating basis due to retirements, resignations, transfers, layoffs, etc., that are
8 unpredictable. Such vacancies will yield an annual savings in the Company's
9 payroll and benefit costs that need to be reflected for ratemaking.

10
11 **Q. EXPLAIN HOW YOU CALCULATED THE NORMAL EMPLOYEE
12 VACANCY RATE.**

13 A. My recommended payroll and benefits expense reduction is based on 54 employee
14 vacancies at the average payroll and benefits cost per employee. I reviewed the
15 Company's history of monthly vacant positions for the fiscal years 2017, 2018,
16 and 2019 relative to the actual monthly employees' count for the fiscal years 2017,
17 2018, 2019, and 2020 provided in the Company's response to I&E-RE-11 (A) and
18 (B), Attachment A and B.¹⁰ For each month of the last three years, I calculated the
19 vacancy rate (percentage) by dividing the actual employee vacancies by the
20 employee count, which I then averaged to determine annual vacancy rates for the

¹⁰ I&E Exhibit No. 1, Schedule 3, pp. 3-4 - PROPRIETARY.

1 fiscal years 2017, 2018, and 2019. The average annual vacancy rate for each of
2 those three years is calculated at 6.44% $((4.10\% + 5.24\% + 9.99\%) \div 3)$,¹¹ which
3 was then applied to the FPFTY total budgeted positions of 839 as provided in the
4 Company's filing, SDR-GAS-RR-26, Attachment A. The result yields average
5 vacancies of 54 positions (839×0.0644) . Multiplying the 54 vacancies by the
6 average payroll and benefit costs produces my recommended adjustment.

7
8 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDED VACANCY**
9 **ADJUSTMENT?**

10 A. As stated in the previous paragraph, a certain level of vacancies due to normal
11 retirements, resignations, transfers, layoffs, etc., exists on a day-to-day operating
12 basis. It is, therefore, unreasonable to assume that the Company will maintain
13 100% full staffing in the FPFTY. Based on its own historic vacancy records for
14 fiscal years 2017 through 2019, the Company experienced an average monthly
15 vacancy rate of 6.44%. There will always be search and placement time involved
16 in filling employee vacancies as per the Company's vacancy-filling or hiring
17 procedures described in the Company's response to I&E-RE-11 (E).¹²

18 Furthermore, my recommended adjustment is conservative given that the
19 Company's vacancy rates have been climbing year after year between 2017 and
20 2019.¹³

¹¹ I&E Exhibit No. 1, Schedule 3, p. 6 – PROPRIETARY.

¹² I&E Exhibit No. 1, Schedule 3, p. 5 – PROPRIETARY.

¹³ I&E Exhibit No. 1, Schedule 3, p. 6 – PROPRIETARY.

1 **Summary of Overall Recommendation for Labor Expense**

2 **Q. SUMMARIZE YOUR OVERALL RECOMMENDED ADJUSTMENT TO**
3 **LABOR EXPENSE FOR PAYROLL ANNUALIZATIONS AND YOUR**
4 **VACANCY ADJUSTMENT.**

5 A. First, I subtracted the pay increase annualization adjustment from the Company's
6 FPFTY claimed labor expense of \$39,527,732 as discussed above to determine the
7 adjusted labor expense as shown in the table below:

8

| | |
|-------------------------------|---------------------|
| FPFTY Labor Expense Claim | \$39,527,732 |
| Less Annualization Adjustment | <u>(\$497,691)</u> |
| Adjusted FPFTY Labor Expense | <u>\$39,030,041</u> |

9 Next, I used the adjusted FPFTY labor expense of \$39,030,041 to apply my
10 recommended vacancy adjustment of 6.44% resulting in a recommended
11 allowance of \$36,516,506 ($\$39,030,041 - (\$39,030,041 \times 0.0644)$) for labor
12 expenses, which produced my recommended adjustment of \$3,011,226
13 ($\$39,527,732 - \$36,516,506$).

14
15 **OTHER EMPLOYEE BENEFITS**

16 **Q. WHAT IS INCLUDED IN THE COMPANY'S CLAIM FOR OTHER**
17 **EMPLOYEE BENEFITS?**

18 A. Other employee benefits expense includes claims for benefits such as medical,
19 dental, vision, life insurance, long term disability, 401K plan, and profit sharing

1 benefits as per the breakdown provided in the Company's response to I&E-RE-16,
2 Attachment A.¹⁴ Please note that the Company's Attachment A for this response is
3 mislabeled as I-RE-017-D.

4
5 **Q. WHAT IS THE COMPANY'S CLAIM FOR OTHER EMPLOYEE**
6 **BENEFITS?**

7 A. The Company's claim for other employee benefits expense is \$7,779,000.¹⁵

8
9 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

10 A. The Company has based its FPFTY claim on the budgeted benefits expense with
11 adjustments for increases in medical expenditures and 401K costs commensurate
12 with the anticipated merit increases and increases in employee headcount.¹⁶

13
14 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

15 A. No.

16
17 **Q. WHAT DO YOU RECOMMEND?**

18 A. I recommend an allowance of \$7,278,032 for other employee benefits expense, or
19 a reduction of \$500,968 (\$7,779,000 - \$7,278,032) to the Company's claim. My
20 recommendation is based on the vacancy adjustment.

¹⁴ I&E Exhibit No. 1, Schedule 4, p. 4.

¹⁵ Columbia Exhibit No. 104, Schedule 1, p. 4.

¹⁶ Columbia Statement No. 9, pp. 13-14.

1 **Q. DOES YOUR VACANCY ADJUSTMENT OF 54 EMPLOYEES AS**
2 **RECOMMENDED FOR LABOR EXPENSE ALSO APPLY TO OTHER**
3 **EMPLOYEE BENEFITS EXPENSE?**

4 A. Yes. The rationale for my employee vacancy adjustment is discussed above when
5 explaining my labor expense adjustments and that rationale applies equally to
6 other employee benefits due to a corresponding reduction in employees eligible
7 for benefits.

8
9 **Q. SUMMARIZE YOUR OVERALL RECOMMENDED ADJUSTMENT TO**
10 **OTHER EMPLOYEE BENEFITS EXPENSE FOR YOUR VACANCY**
11 **ADJUSTMENT.**

12 A. I used the FPFTY other employee benefits expense of \$7,779,000 to apply my
13 recommended employee vacancy adjustment for 54 employees (6.44% vacancy
14 rate) which produces my recommended vacancy adjustment for other employee
15 benefits expense reduction of \$500,968 ($\$7,779,000 - (\$7,779,000 \times 0.0644)$).

16
17 **INCENTIVE COMPENSATION**

18 **Q. WHAT IS INCENTIVE COMPENSATION?**

19 A. Incentive compensation consists of payments made to eligible employees that are
20 in addition to the employees' base salaries and wages. An incentive compensation
21 payout is generally based on the attainment of key performance indicators
22 established by the Company or affiliated/parent company.

1 **Q. WHAT IS THE COMPANY’S CLAIM?**

2 A. The Company’s incentive compensation claim is \$2,267,000.¹⁷

3

4 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIM?**

5 A. The estimate for incentive compensation is based on the specific salary and
6 incentive potential for each position approved in the budget on the assumption that
7 the position will be filled by the year end.¹⁸ The payment of cash-based incentive
8 compensation is based on achievement of performance targets/triggers during the
9 performance period, such as financial (net operating earnings per share (NOEPS)),
10 customer care, and safety measures as detailed in the parent company’s incentive
11 plan, “NiSource Inc. - 2010 Omnibus Incentive Plan.”¹⁹

12

13 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

14 A. No.

15

16 **Q. WHAT IS YOUR RECOMMENDATION?**

17 A. I recommend an allowance of \$1,893,251 for incentive compensation, or a
18 reduction of \$373,749 (\$2,267,000 - \$1,893,251) to the Company’s claim.

¹⁷ Columbia Exhibit 104, Schedule 1, p. 4.

¹⁸ Columbia Statement No. 9, pp. 13-14.

¹⁹ Columbia SDR-GAS-RR-027, Attachments A through E.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

2 A. My recommendation is based on a three-year historic average of incentive
3 compensation payouts. In the HTY ended November 30, 2019, the Company's
4 normalized incentive compensation was \$1,476,533.²⁰ Additionally, the incentive
5 compensation amounts for the 12-months ended November 30, 2017, and
6 November 30, 2018 were \$2,682,071 and \$1,521,149, respectively.²¹ Considering
7 the variability in incentive payouts over the last three years, I utilized an average
8 of incentive compensation in my recommendation, which will even out historic
9 highs and lows. Accordingly, I recommend an allowance of \$1,893,251
10 $((\$2,682,071 + \$1,521,149 + \$1,476,533) \div 3)$.

11 Based on the Company's response to I&E-RE-12 (A) there is no specific
12 number of eligible employees or base payroll for determining incentive
13 payments.²² Also, in its response to I&E-RE-13 (D) the Company states that the
14 performance triggers must be met before any incentive compensation is funded
15 and no cash awards will be paid under financial, customer care or safety measures
16 unless the corporation's NOEPS for the performance period meets or exceeds the
17 trigger level of performance.²³ Therefore, utilizing a three-year historic average is
18 justified in anticipating future results.

²⁰ Columbia Exhibit 4, Schedule 1, p. 2.

²¹ Columbia Exhibit 4, Schedule 1, p. 2.

²² I&E Exhibit No. 1, Schedule 5, pp. 1-2.

²³ I&E Exhibit No. 1, Schedule 6, p. 2.

1 Additionally, as the determination of incentive compensation relies heavily
2 on the NOEPS trigger with a weighting of 75%/85%,²⁴ and as the Company makes
3 it very clear in its response to I&E-RE-13 (D) that no incentive compensation will
4 be paid, including the customer care and safety measures, if financial goals are not
5 met,²⁵ there is little discernable benefit to ratepayers in the Company's incentive
6 compensation program. Accordingly, allowing a three-year normalized amount is
7 more than reasonable.

8 9 **FICA TAXES**

10 **Q. WHAT IS FICA TAX EXPENSE?**

11 A. The Federal Insurance Contributions Act (FICA) tax is a payroll tax imposed on
12 both employers and employees to fund the social security and Medicare programs
13 that provide benefits to retirees, the disabled, and survivors of deceased workers.
14 The employers' portion of the 2020 social security tax rate is 6.2%, and the
15 corresponding Medicare tax rate is 1.45%. The social security tax has a wage
16 limit in 2020 of \$137,700.²⁶

17 18 **Q. WHAT IS THE COMPANY'S CLAIM?**

19 A. The Company's FICA tax expense claim is \$3,001,823.²⁷

²⁴ Columbia filing SDR RR-027, Attachment B, pp. 2-3.

²⁵ I&E Exhibit No. 1, Schedule 6, p. 2.

²⁶ <https://www.irs.gov/taxtopics/tc751>, accessed on July 20, 2020.

²⁷ Columbia Exhibit 106, Schedule 2, p. 2.

1 **Q. WHAT IS THE BASIS OF THE COMPANY'S CLAIM?**

2 A. The Company's claim is based on the HTY FICA experienced rate of 7.1823% for
3 the employers' share of FICA taxes.²⁸

4

5 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

6 A. No. While I am not disputing the Company's 7.1823% experienced rate, it is
7 necessary to make an adjustment to the Company's FICA tax expense claim that
8 corresponds to my labor and incentive compensation recommendations as
9 discussed above.

10

11 **Q. WHAT IS YOUR RECOMMENDATION FOR FICA TAXES?**

12 A. I recommend a FICA tax expense allowance of \$2,758,704 or a reduction of
13 \$243,119 (\$3,001,823 - \$2,758,704) to the Company's claim.

14

15 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

16 A. My recommended adjustments to labor expense and incentive compensation
17 necessitate a corresponding reduction to the Company's FICA tax expense. In
18 determining my recommended adjustment, I applied the Company's HTY FICA
19 experienced rate of 7.1823%.²⁹

²⁸ Columbia Exhibit 106, Schedule 2, p. 3.

²⁹ Columbia Exhibit No. 106, Schedule 2, p. 3.

1 **Q. HOW DID YOU COMPUTE THE RECOMMENDED ADJUSTMENT TO**
2 **FICA TAXES?**

3 A. I multiplied my recommended total reduction to labor expense and incentive
4 compensation of \$3,384,975 (\$3,011,226 + \$373,749) by the Company's HTY
5 FICA experienced rate of 7.1823% to determine my recommended reduction of
6 \$243,119 ($\$3,384,975 \times 0.071823$) to FICA tax expense.

7

8 **PUC, OCA, OSBA FEES**

9 **Q. WHAT ARE PUC ASSESSMENTS?**

10 A. PUC assessments are based on a percentage of intrastate gross revenues and
11 charged to regulated utility companies by the PUC on behalf of regulatory entities
12 such as the PUC, the Office of Consumer Advocate (OCA), and the Office of
13 Small Business Advocate (OSBA), as well as a General Safety Assessment. These
14 assessments are used to fund the expenditures of such entities for the following
15 year.

16

17 **Q. WHAT IS THE COMPANY'S CLAIM FOR PUC, OCA, AND OSBA FEES?**

18 A. The Company's claim for PUC, OCA and OSBA assessment fees is \$2,262,000.³⁰

³⁰ Columbia Exhibit No. 104, Schedule 1, p. 4.

1 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

2 A. According to the Company's response to I&E-RE-34, the claim was based on
3 budget and actual assessments for the HTY and did not reflect the revised factors
4 as presented in latest Assessment Notice from September 2019. Due to
5 fluctuations, the Company estimated its FPFTY expense by averaging its
6 assessments for the years 2015 through 2019.³¹

7
8 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

9 A. No.

10

11 **Q. WHAT DO YOU RECOMMEND?**

12 A. I recommend an allowance of \$1,805,024, or a reduction of \$456,976 to the
13 Company's claim (\$2,262,000 - \$1,805,024).

14

15 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

16 A. I am basing my recommendation on the most recent general assessment notice of
17 \$1,805,024.³² It is more prudent to rely on the most up-to-date data for PUC
18 assessments. Further, due to the current pandemic the present moment is a special
19 time without historical precedence and using the most recent assessment is
20 reasonable because it is lower than other recent years. Finally, my

³¹ I&E Exhibit No. 1, Schedule 7, p. 1.

³² I&E Exhibit No. 1, Schedule 8, p. 2.

1 recommendation may be higher than actual future costs given the unique
2 circumstances of this pandemic.

3

4 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 A. Yes.

JOHN E. ZALESKY

PROFESSIONAL EXPERIENCE AND EDUCATION

EDUCATION & TRAINING

National Association of Regulatory Utility Commissioners **Clearwater Beach, FL**
46th Eastern NARUC Utility Rate School October 2018

Mount St. Mary's University **Emmitsburg, MD**
Master of Arts in Philosophical Studies *Class of 2017*
Thesis: Whether Social Media are Beneficial for Human Friendship

Harrisburg Area Community College **Harrisburg, PA**
Accounting *Class of 2013*
Associate in Arts in Business Studies, Highest Honors

The Pennsylvania State University **University Park, PA**
Smeal College of Business, Schreyer Honors College *Class of 2012*
Bachelor of Science in Finance, With Highest Distinction
Minors in Spanish, International Studies, and International Business
Thesis: Present Value Analysis of Pennsylvania Tuition Subsidies

PROFESSIONAL EXPERIENCE

Pennsylvania Public Utility Commission **Harrisburg, PA**
Fixed Utility Financial Analyst *2017-Present*

Pennsylvania Office of the Budget, Comptroller Operations **Harrisburg, PA**
Executive Accounting Specialist *2017*

Mount 2000 High School Retreat **Emmitsburg, MD**
Finance Coordinator *2016*

Pennsylvania Department of Revenue, Corporation Taxes **Harrisburg, PA**
Taxing Officer *2012-2014*

David K Mitchell Financial **Nanticoke, PA**
Intern *2011*

EXPERIENCE

I have provided assistance with, worked on, or written testimony for the following proceedings:

- Docket No. R-2019-3015162 – UGI Utilities, Inc. – Gas Division*
- Docket No. P-2020-3019290 – PECO Default Service Plan
- Docket No. A-2019-3012241 – Veolia Acquisition
- Docket No. R-2019-3010958 – Twin Lakes Utilities, Inc.*
- Docket No. R-2019-3009559 – Eaton Sewer and Water – Wastewater
- Docket No. R-2019-3009567 – Eaton Sewer and Water – Water
- Docket No. R-2019-3009624 – PECO Energy 1307(f)
- Docket No. R-2019-3006904 – Newtown Artesian Water Company*
- Docket No. A-2018-3006061, A-2018-3006062, and A-2018-3006063 – Aqua-Peoples Acquisition*
- Docket No. R-2018-3003558 – Aqua Pennsylvania, Inc.
- Docket No. R-2018-3003561 – Aqua Pennsylvania Wastewater, Inc.
- Docket No. R-2018-3001306 – Hidden Valley Utility Services – Water Division*
- Docket No. R-2018-3001307 – Hidden Valley Utility Services – Wastewater Division*
- Docket No. R-2018-3000164 – PECO Energy – Electric*
- Docket No. R-2018-3001568 – PECO Energy – Gas (1307(f))
- Docket No. R-2017-2640058 – UGI Utilities, Inc. – Electric Division

*Testimony Submitted

**I&E Exhibit No. 1
Witness: John Zalesky**

NON-PROPRIETARY

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Exhibit to Accompany

the

Direct Testimony

of

John Zalesky

Bureau of Investigation and Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Office of Consumer Advocate – Set 2

Question No. OCA 2-032:

Referring to Statement No. 4, Page 23, please provide the specifics of the prior base rate case filing experience and the expectation of future base rate case filings that support a one-year normalization period.

Response:

CPA has been filing regular base rate case proceedings for over 10 years and plans on filing annual base rate cases in the near future. The need for annual cases is based upon the capital commitments as described in the testimonies of witnesses Huwar (pages 11 through 17) and Kitchell (pages 15-16). The Company does not defer and amortize rate case expense but rather directly books costs associated with filing rate cases to O&M expense in expectation of annual rate case filings. Please see the response to OCA 2-031 for additional information relating to rate case expense.

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Office of Consumer Advocate – Set 2

Question No. OCA 2-033:

Please provide the dates of filings of each of the Company's last three base rate cases.

Response:

The Company's last three base rate proceedings filed were as follows:

Docket No: R-2018-2647577 - Filed on March 16, 2018

Docket No. R-2016-2529660 – Filed on March 18, 2016

Docket No. R-2015-2468056 – Filed on March 19, 2015

I&E Exhibit No. 1
Schedule 3
Page 1 of 6
PROPRIETARY

I&E Exhibit No. 1
Schedule 3
Page 2 of 6
PROPRIETARY

I&E Exhibit No. 1
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PROPRIETARY

I&E Exhibit No. 1
Schedule 3
Page 5 of 6
PROPRIETARY

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set RE

Question No. I&E-RE-016:

Reference Exhibit No. 104, Schedule 1, p. 4 concerning other employee benefits of \$7,227,000 (FTY) and \$7,779,000 (FPFTY). Provide the following:

- A. A detailed breakdown by type of expense included in this claim similar to the detailed schedule provided in the 2012 rate case at Docket No. R-2012-2321748, Volume 5, Exhibit No. 104, Sch. 2, pp. 11-12;
- B. In the response to Part A above, make sure to include a breakdown between capitalized and expensed amounts of the following:
 1. Profit sharing benefits;
 2. Stock rewards;
 3. State whether all allocated amounts from the parent company and/or affiliated companies are included in response to Parts A and B above. If not, identify the following:
 - a. The account (on Columbia Exhibit No. 104, Sch. 1, p. 2) where such amounts are reflected;
 - b. The attributable expense amount for profit sharing benefits;
 - c. The attributable capitalized amount for profit sharing benefits;
 - d. The attributable expense amount for stock rewards; and
 - e. The attributable capitalized amount for stock rewards;
- C. Supporting calculation for ratemaking/budget adjustments and documentation used to determine the FTY and FPFTY Other Employee

Benefits dollar amounts needed for each type of expense specified in response to Part A above.

Response:

- A. Please see I&E-RE-016 Attachment A to this response.
- B. 1. Please see I&E-RE-016 Attachment A to this response.
2. Part A Response includes profit sharing benefits but not stock awards. The allocated amounts for stock awards are shown on Exhibit 104, Sch.1, p. 2 in the Labor line. The amounts included in the FTY and FPFTY for stock awards are listed below (note there is no capitalization of this expense)
- FTY: \$469,520
FPFTY: \$570,765
3. All allocated amounts from the parent company are not included in the responses to Part A and Part B.
- a. Allocated amounts from the parent company are embedded in NCSC-Shared Services and NCSC-Shared Operations on Line 20 and 21 of Exhibit 104 Schedule No. 1.
- b. The attributable amount related to profit sharing is \$191,069 for the FTY and \$215,125 for the FPFTY.
- c. The capitalized amounts for profit sharing are \$54,494 for the FTY and \$60,360 for the FPFTY.
- d. The attributable amount related to stock rewards is \$1,509,587 for the FTY and \$1,728,531 for the FPFTY.
- e. No amount is capitalized for the corporate allocated portion of stock rewards.
- C. Stock based compensation is calculated using the average market price of NiSource's common stock at the date of each grant less the present value of any dividends not received during the vesting period. Stock based compensation is expensed, net of forfeitures, over the vesting period which is generally three years. NiSource Corporate Services' stock based

compensation is allocated to the operating companies based on how each employee receiving the stock award charges his/her labor.

Other benefit expenses budget assumptions are provided by AON Hewitt for NiSource as a whole and are allocated to Columbia based on a labor allocation factor.

| Twelve Months Ended November 30, 2020 | | | |
|--|-------------------|--------------------|------------------|
| Hyperion Account | Gross | Capital | Net |
| Other Benefits | 174,460 | (71,078) | 103,382 |
| Employee Medical Health Insurance | 8,438,188 | (3,698,362) | 4,739,826 |
| 401K | 2,984,270 | (1,304,740) | 1,679,530 |
| Dental | 420,607 | (169,865) | 250,743 |
| Group Life Active | 203,142 | (82,724) | 120,418 |
| Long Term Disability | 324,495 | (131,314) | 193,181 |
| Profit Sharing | 224,171 | (131,529) | 92,642 |
| Vision | 78,749 | (31,724) | 47,025 |
| Total | 12,848,081 | (5,621,335) | 7,226,746 |

| Twelve Months Ended December 31, 2021 | | | |
|--|-------------------|--------------------|------------------|
| Hyperion Account | Gross | Capital | Net |
| Other Benefits | 177,000 | (78,478) | 98,522 |
| Employee Medical Health Insurance | 9,062,000 | (4,017,891) | 5,044,109 |
| 401K | 2,983,000 | (1,322,596) | 1,660,404 |
| Dental | 436,000 | (193,313) | 242,687 |
| Group Life Active | 212,000 | (93,996) | 118,004 |
| Long Term Disability | 337,000 | (149,418) | 187,582 |
| Profit Sharing | 687,000 | (304,601) | 382,399 |
| Vision | 82,000 | (36,357) | 45,643 |
| Total | 13,976,000 | (6,196,650) | 7,779,350 |

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set RE

Question No. I&E-RE-012:

Reference Columbia Exhibit No. 4, Schedule 1, p. 2 and Schedule 2, p. 4, concerning incentive compensation:

- A. State the number of eligible employees by category (union, non-union, and non-union temporary) for the per book November 30, 2018 incentive compensation amount of \$1,472,179 with a breakdown by employee category along with the base payroll amount used for calculation of incentive payment;
- B. Provide corresponding incentive compensation amounts by the 12-months ended November 30, 2017 and November 30, 2018, and the corresponding total base payroll used as a determination for each period's computed incentive compensation amount; and
- C. Provide a breakdown of Ni-Source *allocated* amounts for incentive compensation by the following 12-months ended November 30, 2017; November 30, 2018; and November 30, 2019; the projected amount for November 30, 2020; and the claimed amount for December 31, 2021. Specify where these amounts are included (which line numbers) on Exhibit No. 4, Schedule 1 and Exhibit No. 104, Schedule 1.

Response:

- A. All Company employees are eligible to participate in the incentive compensation program. The per books amount for O&M Incentive Compensation of \$1,472,179 is actually a combination of parts of two separate incentive plans. During the twelve months ended November 30, 2019, the per books accruals of \$105,213 relate to the 2018 Incentive Plan and \$1,366,966 relate to the 2019 Incentive Plan. Because the amount of \$1,472,179 is a combination of accruals for two separate plans, there is no

specific number of eligible employees or base payroll. A breakdown by employee category for “per books” amounts is not available as the accruals for Incentive Compensation are booked at the total Company level.

- B. The corresponding O&M expense per books numbers for the twelve months ended November 30, 2017 and the twelve months ended November 30, 2018 are:

I&E-RE-012-D Table 1

| Incentive Plan Year | TME 11-30-2017 | TME 11-30-2018 |
|----------------------------|-----------------------|-----------------------|
| Y2016 | \$302,595 | - |
| Y2017 | \$2,379,476 | \$203,806 |
| Y2018 | | \$1,317,343 |
| Total | \$2,682,071 | \$1,521,149 |

- C. Please see I&E-RE-12-D Table 2 below for O&M incentive compensation charges allocated from NiSource Corporate Services Company.

I&E-RE-012-D Table 2

| Period | NCSC | Reference |
|----------------|-------------|---|
| TME 11/30/2017 | \$4,535,703 | Exhibit 4, Schedule 1, Page 2, Line Number 20, Column 1 |
| TME 11/30/2018 | \$2,509,880 | Exhibit 4, Schedule 1, Page 2, Line Number 20, Column 2 |
| TME 11/30/2019 | \$1,729,947 | Exhibit 4, Schedule 1, Page 2, Line Number 20, Column 3 |
| TME 11/30/2020 | \$3,087,491 | Exhibit 104, Schedule 1, Page 2, Line 20, Column 3 |
| TME 11/30/2021 | \$2,958,242 | Exhibit 104, Schedule 1, Page 2, Line 20, Column 5 |

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set RE

Question No. I&E-RE-013:

Reference Columbia Exhibit No. 104, Schedule 1, pp. 2-4 concerning incentive compensation. Provide the following:

- A. The FTY and FPFTY number of eligible employees by category (union, non-union, and non-union temporary) for incentive compensation;
- B. A list of all financial triggers and their specified minimum performance standard to be achieved in order for any incentive amounts to become payable under the incentive plans;
- C. State whether financial goals and other triggers must be met before any incentive compensation is paid; and
- D. Identify the portion of FPFTY incentive compensation expensed/capitalized that would be paid independent of meeting financial goals.

Response:

A. FTY: Union – 534; non-union 288

FPFTY: Union – 551; non-union 288

Columbia does not have temporary employees.

- B. The specified minimum performance standard to be achieved in order for any incentive amounts to become payable under the incentive plan(s) is referred to as “trigger” in the Company’s incentive plan documents included as attachments B-E in GAS-RR-027.
- C. Triggers must be met before any incentive compensation is funded related to that measure in the incentive plan. No awards will be paid under the

Financial, Customer Care, or Safety measures unless the corporation's net operating earnings per share for the performance period meets or exceeds the trigger level of performance.

- D. No incentive compensation would be expensed/capitalized, including the Customer Care and Safety measures, if financial goals are not met.

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set RE

Question No. I&E-RE-034:

Reference Columbia Exhibit No. 104, Schedule 1, p. 3-4 concerning PUC, OCA, and OSBA fees. Provide the following:

- A. Explanation with calculations to support the FTY budget adjustment of \$456,976;
- B. Assessment factors used in the Company's calculation for FTY and FPFTY claims: (1) the PUC; (2) OCA; and (3) OSBA.

Response:

The budgets for PUC, OCA, OSBA and DPC fees for the FTY and FPFTY were based off the budget and actual assessment for the HTY and did not reflect the revised factors contained in the Assessment Notice received by the Company in September 2019.

The overall assessment has decreased for the fiscal year of July 2019 – July 2020. However, I note that while the assessments fluctuate from year to year, they do increase over the long term. Specifically, based on the assessment expenses as reported on the Company's Annual Report to the PUC for the period of 2015 – 2019, the average annual expense was \$2.2M. Therefore, the budgeted expense of \$2,262,000 is a reasonable projection.

Please see I&E-RE-034 Attachment A for excerpts of the 2015 – 2019 Annual Reports.

| |
|--|
| I&E Exhibit No. 1 Schedule 8 Page 1 of 2 |
|--|

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Office of Consumer Advocate – Set 2

Question No. OCA 2-026:

Referring to Exhibit No. 4, Schedule 2, Page 19, please provide a copy of the September 2019 invoice.

Response:

Please see OCA 2-026 Attachment A to this response for a copy of the September 2019 invoice.

I&E Exhibit No. 1
Schedule 8
Page 2 of 2



Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission

Harrisburg, PA 17105-3265

GENERAL ASSESSMENTS INVOICE

| Invoice Date | Invoice Number |
|-------------------------------|----------------|
| 9/9/2019 | 19-120700 |
| Fiscal Year | |
| July 1, 2019 to June 30, 2020 | |

COLUMBIA GAS OF PA INC
ELIZABETH TAPP
290 W NATIONWIDE BLVD
COLUMBUS OH 43215

- Read carefully Notice of Assessment
- Use return envelope provided
- Make check payable to:
Commonwealth of Pennsylvania

| | |
|---------------------------------------|-----------------------|
| PUC Assessment | \$1,549,459.00 |
| Consumer Advocate Assessment | \$122,148.00 |
| SBA Assessment | \$92,173.00 |
| DPC Assessment | \$41,244.00 |
| PAY THIS AMOUNT WITHIN 30 DAYS | \$1,805,024.00 |

TO RECEIVE PROPER CREDIT FOR YOUR
PAYMENT, REMOVE THE BOTTOM PART
OF THIS INVOICE AT THE PERFORATION
AND RETURN WITH YOUR REMITTANCE

MAIL PAYMENT TO:
PA DOR
PO BOX 61380
HARRISBURG, PA 17106-1380

FOLD AND CUT HERE

I&E Statement No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Direct Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher Keller. My business address is Pennsylvania Public
4 Utility Commission, Commonwealth Keystone Building, 400 North Street,
5 Harrisburg, PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
9 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
10 Analyst.

11

12 **Q. WHAT IS YOUR EDUCATION AND EMPLOYMENT BACKGROUND?**

13 A. An outline of my education and employment background is attached as
14 Appendix A.

15

16 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

17 A. I&E is responsible for protecting the public interest in proceedings before the
18 Commission. I&E's analysis in this proceeding is based on its responsibility to
19 represent the public interest. This responsibility requires balancing the interests of
20 ratepayers, the regulated utility, and the regulated community as a whole.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. The purpose of my testimony is to review the base rate filing of Columbia Gas of
3 Pennsylvania, Inc. (Columbia or Company), and make recommendations
4 regarding the Company's rate of return, including capital structure, cost of long-
5 term debt, cost of short-term debt, the cost of equity, and the overall fair rate of
6 return for the fully projected future test year (FPFTY) ending December 31, 2021.

7
8 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

9 A. Yes. I&E Exhibit No. 2 contains schedules that support my testimony.

10

11 **BACKGROUND**

12 **Q. WHAT IS THE GENERAL DEFINITION OF RATE OF RETURN IN THE**
13 **CONTEXT OF A RATE CASE?**

14 A. Rate of return is one of the components of the revenue requirement formula. Rate
15 of return is the amount of revenue an investment generates in the form of net
16 income and is usually expressed as a percentage of the amount of capital invested
17 over a given period of time.

18

19 **Q. WHAT IS THE REVENUE REQUIREMENT FORMULA?**

20 A. The revenue requirement formula used in base rate cases is as follows:

21
$$RR = E + D + T + (RB \times ROR)$$

1 Where:
2 RR = Revenue Requirement
3 E = Operating Expenses
4 D = Depreciation Expense
5 T = Taxes
6 RB = Rate Base
7 ROR = Overall Rate of Return

8
9 In the above formula, the rate of return is expressed as a percentage. The
10 calculation of that percentage is independent of the determination of the
11 appropriate rate base value for ratemaking purposes. As such, the appropriate total
12 dollar return is dependent upon the proper computation of the rate of return and
13 the proper valuation of the Company’s rate base.

14
15 **Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE**
16 **OF RETURN?**

17 A. A fair and reasonable overall rate of return is one that will allow the utility an
18 opportunity to recover those costs prudently incurred by all classes of capital used
19 to finance the rate base during the prospective period in which its rates will be in
20 effect.

21 The *Bluefield Water Works & Improvements Co. v. Public Service Comm.*
22 of *West Virginia*, 262 U.S. 679, 692-93 (1923), and the *FPC v. Hope Natural Gas*

1 Co., 320 U.S. 591, 603 (1944) cases set forth the principles that are generally
2 accepted by regulators throughout the country as the appropriate criteria for
3 measuring a fair rate of return:

- 4 1. A utility is entitled to a return similar to that being earned by other
5 enterprises with corresponding risks and uncertainties, but not as high as
6 those earned by highly profitable or speculative ventures.
- 7 2. A utility is entitled to a return level reasonably sufficient to assure financial
8 soundness.
- 9 3. A utility is entitled to a return sufficient to maintain and support its credit
10 and raise necessary capital.
- 11 4. A fair return can change (increase or decrease) along with economic
12 conditions and capital markets.

13
14 **Q. EXPLAIN HOW THE OVERALL RATE OF RETURN IS**
15 **TRADITIONALLY CALCULATED IN BASE RATE PROCEEDINGS.**

16 A. In base rate proceedings, the overall rate of return is traditionally calculated using
17 the weighted average cost of capital method. To calculate the weighted average
18 cost of capital, a company's capital structure must first be determined by
19 comparing the percentage of each capitalization component, which has financed
20 rate base, to total capital. Next, the effective cost rate of each capital structure
21 component must be determined. The historical component of the cost rate of debt
22 can be computed accurately, and any future debt issuances are based on estimates.

1 The cost rate of common equity is not fixed and is more difficult to measure.
2 Because of this difficulty, a proxy group is used as discussed later in this
3 testimony. Next, each capital structure component percentage is multiplied by its
4 corresponding effective cost rate to determine the weighted capital component cost
5 rate. The I&E table in the “*I&E Position*” section below demonstrates the
6 interaction of each capital structure component and its corresponding effective
7 cost rate. Finally, the sum of the weighted cost rates produces the overall rate of
8 return. This overall rate of return is multiplied by the rate base to determine the
9 return portion of a company’s revenue requirement.

10
11 **COMPANY’S RATE OF RETURN CLAIM**

12 **Q. WHO IS THE COMPANY’S RATE OF RETURN WITNESS?**

13 A. Columbia witness Paul R. Moul is the primary witness addressing rate of return
14 (Columbia Statement No. 8). Mr. Moul provides analysis for the claimed capital
15 structures, long-term debt, and cost of common equity for Columbia.

16
17 **Q. PLEASE SUMMARIZE THE COMPANY’S RATE OF RETURN CLAIM.**

18 A. Mr. Moul recommends the following rate of return for the Company based on its
19 FPFTY ending December 31, 2021 (Columbia Exhibit No. 400, Schedule 1, p. 1):

| Type of Capital | Ratio | Cost Rate | Weighted Cost Rate |
|-----------------|---------|-----------|--------------------|
| Long-Term Debt | 42.22% | 4.70% | 1.98% |
| Short-Term Debt | 3.59% | 2.06% | 0.07% |
| Common Equity | 54.19% | 10.95% | 5.93% |
| Total | 100.00% | | 7.98% |

1 **I&E POSITION**

2 **Q. PLEASE SUMMARIZE YOUR RATE OF RETURN**
3 **RECOMMENDATION.**

4 A. I recommend the following rate of return for the Company (I&E Exhibit No. 2,
5 Schedule 1):

| Type of Capital | Ratio | Cost Rate | Weighted Cost Rate |
|-----------------|---------|-----------|--------------------|
| Long-Term Debt | 42.22% | 4.70% | 1.98% |
| Short-Term Debt | 3.59% | 2.06% | 0.07% |
| Common Equity | 54.19% | 9.86% | 5.34% |
| Total | 100.00% | | 7.39% |

6

7

8 **PROXY GROUP**

9 **Q. WHAT IS A PROXY GROUP AS USED IN BASE RATE CASES?**

10 A. A proxy group is a set of companies that have similar traits of risk in comparison
11 to the subject utility. This group of companies act as a benchmark for determining
12 the subject utility's rate of return in a base rate case.

13

14 **Q. WHAT ARE THE REASONS FOR USING A PROXY GROUP?**

15 A. A proxy group's cost of equity is used as a benchmark to satisfy the long-
16 established guideline of utility regulation that seeks to provide the subject utility
17 with the opportunity to earn a return similar to that of enterprises with
18 corresponding risks and uncertainties.

1 A proxy group is typically utilized since the use of data exclusively from
2 one company may be less reliable. The lower reliability occurs because the data
3 for one company may be subject to events that can cause short-term anomalies in
4 the marketplace. The rate of return on common equity for a single company could
5 become distorted in these circumstances and would therefore not be representative
6 of similarly situated companies. Therefore, a proxy group has the effect of
7 smoothing out potential anomalies associated with a single company.

8
9 **Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR GAS**
10 **INDUSTRY PROXY GROUP?**

11 A. The criteria for my proxy group was designed to select companies that are most
12 like the natural gas distribution company subject in this proceeding. I applied the
13 following criteria to Value Line's Natural Gas Utility company group:

- 14 1. Fifty percent or more of the company's revenues must be generated from
15 the regulated gas utility industry;
- 16 2. The company's stock must be publicly traded;
- 17 3. Investment information for the company must be available from more than
18 one source, which includes Value Line;
- 19 4. The company must not be currently involved/targeted in an announced
20 merger or acquisition;
- 21 5. The company must have four consecutive years of historic earnings data;
22 and

1 6. The company must be operating in a state that has a deregulated gas utility
2 market.

3
4 **Q. WHAT CRITERIA DID MR. MOUL USE IN SELECTING HIS GAS**
5 **PROXY GROUP COMPANIES?**

6 A. Mr. Moul began with the ten gas utility companies in Value Line's Investment
7 Survey. From there, he eliminated one company, UGI Corp., due to its diversified
8 businesses, which includes six reportable segments. These various business
9 segments include propane, international liquefied petroleum gas segments, natural
10 gas utility, energy services, and electric generation. Beyond his rationale for
11 excluding UGI Corp., Mr. Moul has not provided a list of criteria used to
12 determine the remainder of his "Gas Group" other than that the Gas Group is made
13 up of the companies the Commission's Bureau of Technical Utility Services uses
14 to calculate the cost of equity in its Quarterly Earnings Reports (Columbia Gas
15 Statement No. 8, p. 3, line 23 through p. 4, line 12).

1 **Q. WHAT PROXY GROUP DID YOU USE IN YOUR ANALYSIS?**

2 A. I included the following seven companies in my proxy group (I&E Exhibit No. 2,
3 Schedule 2):

| | |
|-------------------------------|-----|
| Atmos Energy Corp. | ATO |
| Chesapeake Utilities Corp. | CPK |
| NiSource Inc. | NI |
| Northwest Natural Holding Co. | NWN |
| ONE Gas, Inc. | OGS |
| South Jersey Industries | SJI |
| Spire Inc. | SR |

4

5

6 **Q. WHAT PROXY GROUP DID MR. MOUL USE IN HIS ANALYSIS?**

7 A. Mr. Moul utilized the following nine companies in his Gas Group (Columbia
8 Exhibit No. 400, Schedule 3, p. 2):

| | |
|-------------------------------|-----|
| Atmos Energy Corp. | ATO |
| Chesapeake Utilities Corp. | CPK |
| New Jersey Resources Corp. | NJR |
| NiSource Inc. | NI |
| Northwest Natural Holding Co. | NWN |
| ONE Gas, Inc. | OGS |
| South Jersey Industries, Inc. | SJI |
| Southwest Gas Holdings, Inc. | SWX |
| Spire, Inc. | SR |

9

1 **Q. DO YOU AGREE WITH MR. MOUL’S GAS PROXY GROUP?**

2 A. Not entirely. While Mr. Moul’s Gas Group includes all seven of the companies in
3 my proxy group, I have excluded two of the companies he uses.

4

5 **Q. PLEASE LIST THE TWO COMPANIES MR. MOUL INCLUDES THAT**
6 **YOU DO NOT AND EXPLAIN WHY YOU HAVE EXCLUDED THEM**
7 **FROM YOUR PROXY GROUP.**

8 A. The two companies Mr. Moul includes in his Gas Group that I have excluded from
9 my proxy group are New Jersey Resources Corp. and Southwest Gas Holdings,
10 Inc. as these companies did not meet my first criterion that fifty percent or more of
11 the company’s revenues must be generated from the regulated gas utility industry.
12 This is important because revenues represent the percentage of cash flow a
13 company receives from each business line related to providing a good or service.
14 If less than fifty percent of revenues come from the regulated gas sector, the
15 companies are not comparable to the subject utility as they do not provide a
16 similar level of regulated business. Therefore, these companies should be
17 removed from the proxy group.

18

19 **CAPITAL STRUCTURE**

20 **Q. WHAT IS A CAPITAL STRUCTURE?**

21 A. A capital structure represents how a firm has financed its rate base with different
22 sources of funds. The primary funding sources are long-term debt and common

1 equity. A capital structure may also include preferred stock and/or short-term
2 debt.

3

4 **Q. WHAT IS THE COMPANY’S CLAIMED CAPITAL STRUCTURE?**

5 A. The Company’s claimed capital structure is summarized in the table below
6 (Columbia Statement No. 8, p. 2, line 2 and Columbia Exhibit No. 400,
7 Schedule 1, p. 1):

| Type of Capital | Ratio |
|-----------------|---------|
| Long-Term Debt | 42.22% |
| Short-Term Debt | 3.59% |
| Common Equity | 54.19% |
| Total | 100.00% |

8

9

10 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIMED CAPITAL**
11 **STRUCTURE?**

12 A. Mr. Moul states that these capital structure ratios are the best approximation of the
13 mix of capital the Company will employ to finance its rate base during the period
14 that new rates are in effect (Columbia Statement No. 8, p. 16, lines 23-25).

15

16 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY’S**
17 **CAPITAL STRUCTURE?**

18 A. I recommend using the Company’s claimed capital structure as presented in the
19 table above.

1 **Q. WHAT IS THE BASIS FOR YOUR CAPITAL STRUCTURE**
2 **RECOMMENDATION?**

3 A. I recommend using the Company's claimed capital structure as it falls within the
4 range of my proxy group's 2019 capital structures, which is the most recent
5 information available at the time of my analysis. The 2019 range consists of long-
6 term debt ratios ranging from 33.18% to 53.48% and equity ratios ranging from
7 32.78% to 59.01%, with a five-year average of 40.29% for long-term debt and
8 47.60% for common equity. Although the Company's short-term debt is below
9 the range 2019 of 4.77% to 19.65%, it is within range for the five-year period
10 2015-2019 for short-term debt of 0.41% to 26.85% (I&E Exhibit No. 2, Schedule
11 2).

12
13 **COST OF LONG-TERM DEBT**

14 **Q. WHAT IS THE COMPANY'S CLAIMED COST RATE OF LONG-TERM**
15 **DEBT?**

16 A. The Company's claimed long-term debt cost rate is 4.70% for the FPFTY
17 (Columbia Statement No. 8, p. 17, lines 14-15).

18
19 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE**
20 **COMPANY'S COST RATE OF LONG-TERM DEBT?**

21 A. I recommend using the Company's claimed long-term debt cost rate of 4.70%.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE**
2 **COMPANY’S CLAIMED COST RATE OF LONG-TERM DEBT?**

3 A. The Company’s claimed cost rate of long-term debt is reasonable, as it is
4 representative of the industry. It falls within my proxy group’s implied long-term
5 debt cost range of 3.14% to 5.82%, with an average implied long-term debt cost of
6 4.91% (I&E Exhibit No. 2, Schedule 3). Therefore, I recommend the Company’s
7 claimed cost rate of long-term debt be used.

8

9 **COST OF SHORT-TERM DEBT**

10 **Q. WHY IS SHORT-TERM DEBT INCLUDED IN THIS PROCEEDING?**

11 A. Natural gas distribution companies (NGDCs) are able to store gas, which is
12 advantageous because it allows NGDCs to pump gas into storage for future use
13 during the summer months when demand and cost for gas are lower. Current gas
14 storage is typically financed by short-term debt. Since ratemaking principles
15 allow for the stored gas in rate base, the associated short-term debt is allowed in a
16 company’s capital structure.

17

18 **Q. WHAT IS THE COMPANY’S CLAIMED COST RATE OF SHORT-**
19 **TERM DEBT?**

20 A. The Company’s claimed short-term debt cost rate is 2.06% for the FPFTY
21 (Columbia Statement No. 8, p. 17, lines 19-20).

1 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIMED COST RATE**
2 **OF SHORT-TERM DEBT?**

3 A. Mr. Moul states that the Company obtains its short-term debt from the NiSource
4 money pool, which has as its source commercial paper (Columbia Statement
5 No. 8, p. 17, lines 20-21). The cost of short-term debt for the Company is
6 comprised of the London Interbank Offered Rate (LIBOR) plus a spread for
7 NiSource commercial paper. For this case, Mr. Moul used Bloomberg’s three-
8 month average forecasted LIBOR rate from the fourth quarter of 2020 to the
9 fourth quarter of 2021 of 1.76% (I&E Exhibit No. 2, Schedule 4), and when the
10 0.30% margin is added, Mr. Moul’s short-term debt cost rate estimate is 2.06%.

11
12 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY’S**
13 **COST RATE OF SHORT-TERM DEBT?**

14 A. I recommend using the Company’s claimed short-term debt cost rate of 2.06%.

15
16 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE**
17 **COMPANY’S CLAIMED COST RATE OF SHORT-TERM DEBT?**

18 A. Although the Blue Chip Financial Forecast for the three-month average forecasted
19 LIBOR rate from the third quarter of 2020 to the third quarter of 2021 reflects a
20 cost rate of 0.52% (I&E Exhibit No. 2, Schedule 5), Mr. Moul’s three-month
21 average forecasted LIBOR rate relies on the most recent information available.
22 Therefore, I do not oppose the Company’s claimed cost rate.

1 **COST OF COMMON EQUITY**

2 **COMMON METHODS**

3 **Q. WHAT METHODS ARE COMMONLY PRESENTED BY UTILITIES IN**
4 **DETERMINING THE COST OF COMMON EQUITY?**

5 A. Four methods commonly presented to estimate the cost of common equity are the
6 Discounted Cash Flow (DCF), the Capital Asset Pricing Model (CAPM), the Risk
7 Premium (RP) Method, and the Comparable Earnings (CE) Method.

8
9 **Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?**

10 A. The DCF method is the “dividend discount model” of financial theory, which
11 maintains that the value (price) of any security or commodity is the discounted
12 present value of all future cash flows. The DCF method assumes that investors
13 evaluate stocks in the classical economic framework, which maintains that the
14 value of a financial asset is determined by its earning power, or its ability to
15 generate future cash flows.

16
17 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?**

18 A. The CAPM describes the relationship of a stock’s investment risk and its market
19 rate of return. It identifies the rate of return investors expect so that it is
20 comparable with returns of other stocks of similar risk. This method hypothesizes
21 that the investor-required return on a company’s stock is equal to the return on a
22 “risk free” asset plus an equity premium reflecting the company’s investment risk.

1 In the CAPM, two types of risk are associated with a stock: (1) firm-specific risk
2 (unsystematic risk); and (2) market risk (systematic risk), which is measured by a
3 firm's beta. The CAPM allows for investors to receive a return only for bearing
4 systematic risk. Unsystematic risk is assumed to be diversified away, and
5 therefore, does not earn a return.

6
7 **Q. WHAT IS THE THEORETICAL BASIS FOR THE RP METHOD?**

8 A. The theoretical basis for the RP method is a simplified version of the CAPM. The
9 RP method's theory is that common stock is riskier than debt and, thus, investors
10 require a higher expected return on stocks than bonds. In the RP approach, the
11 cost of equity is made up of the cost of debt and a risk premium. While the
12 CAPM uses the market risk premium, it also directly measures the systematic risk
13 of a company group through the use of beta. The RP method does not measure the
14 specific risk of a company.

15
16 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CE METHOD?**

17 A. The CE method utilizes the concept of "opportunity cost." This means that
18 investors will likely dedicate their capital to the investment offering the highest
19 return with similar risk to alternative investments. Unlike the DCF, CAPM, and
20 the RP methods, the CE method is not market-based and relies upon historic
21 accounting data. The most problematic issue with the CE method is determining
22 what constitutes comparable companies.

1 **Q. WHAT METHOD DO YOU RECOMMEND USING TO DETERMINE AN**
2 **APPROPRIATE COST OF COMMON EQUITY FOR COLUMBIA?**

3 A. I recommend using the DCF method as the primary method to determine the cost
4 of common equity. I also recommend using the results of the CAPM as a
5 comparison to the DCF results. My recommendation is consistent with the
6 methodology historically used by the Commission in base rate proceedings, even
7 as recently as 2017, 2018, and 2020.¹

8
9 **Q. PLEASE EXPLAIN WHY YOU CHOSE TO USE THE DCF AND CAPM IN**
10 **YOUR ANALYSIS.**

11 A. I have used the DCF as the primary method for a several reasons. First, the DCF
12 is appealing to investors as it is based upon the concept that the receipt of
13 dividends in addition to expected appreciation is the total return requirement
14 determined by the market. Second, the use of a growth rate and expected dividend
15 yield are also strengths of the DCF, as this recognizes the time value of money and
16 is forward-looking. Third, the use of the utilities' own, or in this case, the proxy
17 group's stock prices and growth rates directly in the calculation also causes the
18 DCF to be industry and company-specific. Finally, the DCF method is the

¹ *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company*; Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA*; Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92.

1 superior method for determining the rate of return for the current economic market
2 because it measures the cost of equity directly.

3 I have included a CAPM analysis as a comparison because the CAPM and
4 the DCF include inputs that allow the results to be specific to the utility industry,
5 although the CAPM is far less responsive to changes in the industry than the DCF.
6 The CAPM is based on the performance of U.S. Treasury bonds and the
7 performance of the market as measured through the S&P 500 and is company-
8 specific only through the use of beta. Beta reflects a stock's volatility relative to
9 the overall market, thereby incorporating an industry-specific aspect to the CAPM,
10 but only as a measure of how reactive the industry is compared to the market as a
11 whole. Although changes in the utility industry are more likely to be accurately
12 reflected in the DCF, which uses the companies' actual prices, dividends, and
13 growth rates, I have included the results of my CAPM analysis because changes in
14 the market, whether as a whole or specific to the utility industry, affect the
15 outcome of each method in different ways. Although I have chosen to use the
16 CAPM as a secondary method, it does have several disadvantages and should not
17 be used as a primary method.

18
19 **Q. EXPLAIN THE DISADVANTAGES OF THE CAPM.**

20 A. The CAPM, and the RP method by virtue of its similarities to the CAPM, give
21 results that indicate to an investor what the equity cost rate should be if current
22 economic and regulatory conditions are the same as those present during the

1 historical period in which the risk premiums were determined. Although the
2 CAPM and RP results can be useful to investors in making rational buy and sell
3 decisions within their portfolios, the DCF method is superior for determining the
4 rate of return for the current economic market and measuring the cost of equity
5 directly. The CAPM and the RP methods are less reliable indicators because they
6 measure the cost of equity indirectly and risk premiums vary depending on the
7 debt and equity being compared.

8
9 **Q. IS THERE ANY ACADEMIC EVIDENCE THAT QUESTIONS THE**
10 **CREDIBILITY OF THE CAPM MODEL?**

11 A. Yes. An article, “Market Place; A Study Shakes Confidence in the Volatile-Stock
12 Theory,” which appeared in the *New York Times* on February 18, 1992,
13 summarized a CAPM study conducted by professors Eugene F. Fama and
14 Kenneth R. French.² Their study examined the importance of beta, CAPM’s risk
15 factor, in explaining returns on common stock. In CAPM theory a stock with a
16 higher beta should have a higher expected return. However, they found that the
17 model did not do well in predicting actual returns and suggested the use of more
18 elaborate multi-factor models.

19 A more recent article, “The Capital Asset Pricing Model: Theory and
20 Evidence,” which appeared in the *Journal of Economic Perspectives*, states that

² Berg, Eric N. “Market Place; A Study Shakes Confidence in the Volatile-Stock Theory” *The New York Times*, 18 Feb 1992: *nytimes.com* Web. 23 Mar 2016.

1 “the attraction of the CAPM is that it offers powerful and intuitively pleasing
2 predictions about how to measure risk and the relation between expected return
3 and risk. Unfortunately, the empirical record of the model is poor - poor enough
4 to invalidate the way it is used in applications.”³ As a result, I conclude that the
5 CAPM’s relevance to the investment decision making process does not carry over
6 into the regulatory rate setting process.

7
8 **Q. PLEASE EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE RP**
9 **METHOD FROM YOUR ANALYSIS.**

10 A. The RP method is excluded because it is a simplified version of the CAPM and is
11 subject to the same faults listed above. Additionally, unlike the CAPM, the RP
12 method does not recognize company-specific risk through beta.

13
14 **Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE CE METHOD**
15 **IN YOUR ANALYSIS.**

16 A. The CE method is excluded because the choice of which companies are
17 comparable is highly subjective, and it is debatable whether historic accounting
18 values are representative of the future. Moreover, its historical usage in this
19 regulatory forum has been minimal.

³ Fama, Eugene F. and French, Kenneth R., “The Capital Asset Pricing Model: Theory and Evidence.” *Journal of Economic Perspectives* (2004): Volume 18, Number 3, pp. 25-46.

1 **SUMMARY OF THE COMPANY’S RESULTS**

2 **Q. WHAT ARE THE RESULTS OF THE COMPANY’S COST OF EQUITY**
3 **ANALYSES?**

4 A. Mr. Moul uses the DCF, CAPM, RP, and CE methods in analyzing the Company’s
5 cost of equity. He makes several adjustments to his results, which include
6 consideration for size, various claimed risk factors, leverage, and management
7 performance. Ultimately, Mr. Moul opines that a cost of equity of 10.95% is
8 warranted (Columbia Statement No. 8, p. 4, line 21 through p. 5, line 12 and
9 Columbia Exhibit No. 400, Schedule 1, p. 2).

10

11 **I&E RECOMMENDATION**

12 **Q. WHAT IS YOUR RECOMMENDED COST OF COMMON EQUITY FOR**
13 **COLUMBIA?**

14 A. Based upon my analysis, I recommend a cost of common equity of 9.86% (I&E
15 Exhibit No. 2, Schedule 1).

16

17 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

18 A. My recommendation is based on the use of the DCF method. As explained below,
19 I used my CAPM result only to present to the Commission a comparison to my
20 DCF results. My DCF analysis uses a spot dividend yield, a 52-week dividend
21 yield, and earnings growth forecasts.

1 **DISCOUNTED CASH FLOW**

2 **Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.**

3 A. My analysis employs the constant growth DCF model as portrayed in the
4 following formula:

5
$$K = D_1/P_0 + g$$

6 Where:

7 K = Cost of equity

8 D₁ = Dividend expected during the year

9 P₀ = Current price of the stock

10 g = Expected growth rate

11 When a forecast of D₁ is not available, D₀ (the current dividend) must be adjusted
12 by one half of the expected growth rate to account for changes in the dividend paid
13 in period one. As forecasts for each company in my proxy group were available
14 from Value Line, no dividends were adjusted for the purpose of my analysis.

15

16 **Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS
17 USED IN YOUR DCF ANALYSIS.**

18 A. A representative dividend yield must be calculated over a time frame that avoids
19 the problems of both short-term anomalies and stale data series. For my DCF
20 analysis, the dividend yield calculation places equal emphasis on the most recent
21 spot and the 52-week average dividend yields. The following table summarizes

1 my dividend yield computations for the proxy group (I&E Exhibit No. 2,
2 Schedule 6):

| Seven-Company Proxy Group | Dividend Yield |
|--------------------------------------|-----------------------|
| Spot | 3.47% |
| 52-week average | 3.20% |
| Average | 3.34% |

3

4

5 **Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR**
6 **EXPECTED GROWTH RATE?**

7 A. I have used five-year projected growth rate estimates from Value Line, Yahoo!
8 Finance, Zacks, and Morningstar.

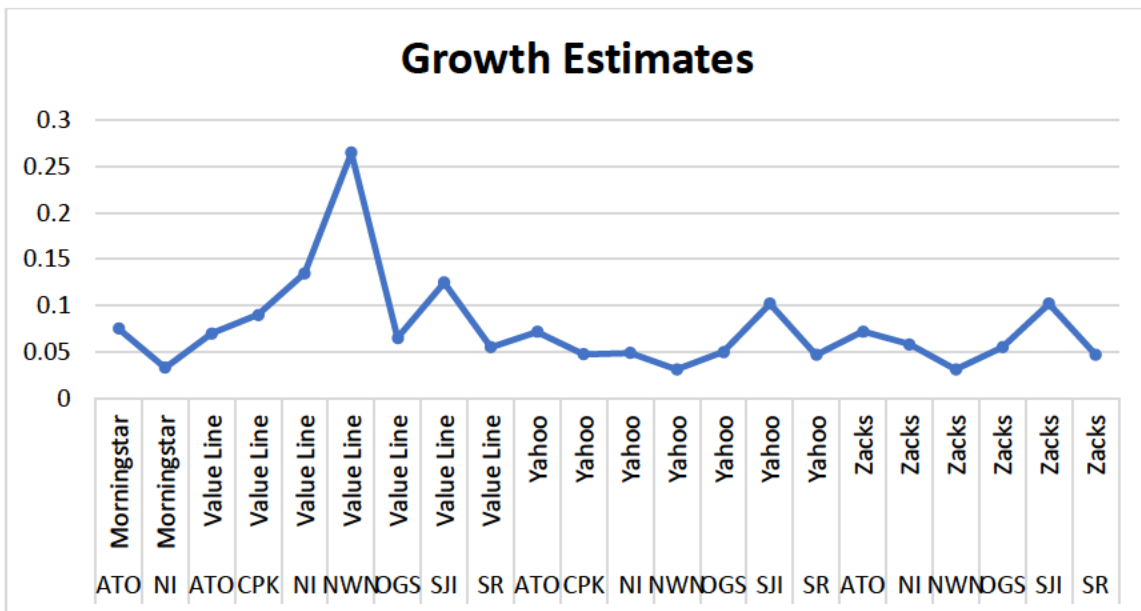
9

10 **Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS**
11 **GROWTH RATES?**

12 A. The expected average growth rates for the seven-company proxy group ranged
13 from 3.10% to 26.50% with an overall average of 7.64%. For the purpose of
14 determining the growth estimate, I subsequently eliminated Northwest Natural Gas
15 Co.'s (Northwest) Value Line growth estimate of 26.50% to determine a new
16 adjusted average of 6.52% (I&E Exhibit No. 2, Schedule 7).

1 **Q. WHY DID YOU ELIMINATE NORTHWEST'S VALUE LINE**
 2 **PROJECTED GROWTH RATE?**

3 A. While the use of a proxy group largely smooths out various anomalies, Value
 4 Line's growth projection for Northwest is extremely inconsistent and would have
 5 an unreasonable and unwarranted impact on my DCF analysis. This would
 6 adversely affect my recommendation for the Company's cost of common equity
 7 because it is harmful to ratepayers by creating an unjustified increase in return on
 8 equity and consequently pressures rates upward, which is not in the public interest.
 9 Value Line's estimate of 26.50% is nearly 3.5 times higher and greater than three
 10 standard deviations over the originally calculated 7.64% overall average.
 11 Furthermore, the estimate is almost four times higher than the average of the
 12 remaining estimates. Additionally, I was unable to find any explanation or
 13 justification of why this estimate was so high. The following chart illustrates just
 14 how much of an outlier this result is:



15

1 **Q. WHAT IS THE RESULT OF YOUR DCF ANALYSIS BASED ON YOUR**
2 **RECOMMENDED DIVIDEND YIELD AND GROWTH RATE?**

3 A. The results of my DCF analysis are calculated as follows (I&E Exhibit No. 2,
4 Schedule 8):

$$\begin{array}{rclclcl} K & = & D_1/P_0 & + & g \\ 9.86\% & = & 3.34\% & + & 6.52\% \end{array}$$

5

6

7 **CAPITAL ASSET PRICING MODEL**

8 **Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.**

9 A. My analysis employs the traditional CAPM as portrayed in the following formula:

10
$$K = R_f + \beta(R_m - R_f)$$

11 Where:

12 K = Cost of equity

13 R_f = Risk-free rate of return

14 R_m = Expected rate of return on the overall stock market

15 β = Beta measures the systematic risk of an asset

16

17 **Q. WHAT IS BETA AS EMPLOYED IN YOUR CAPM ANALYSIS?**

18 A. Beta is a measure of the systematic risk of a stock in relation to the rest of the
19 stock market. A stock's beta is estimated by calculating the linear regression of a
20 stock's return against the return on the overall stock market. The beta of a stock

1 with a price pattern identical to that of the overall stock market will equal one. A
2 stock with a price movement that is greater than the overall stock market will have
3 a beta that is greater than one and would be described as having more investment
4 risk than the market. Conversely, a stock with a price movement that is less than
5 the overall stock market will have a beta of less than one and would be described
6 as having less investment risk than the market.

7
8 **Q. HOW DID YOU DETERMINE YOUR BETA FOR YOUR CAPM**
9 **ANALYSIS?**

10 A. In estimating an equity cost rate for my proxy group of seven gas companies, I
11 used the average of the betas for the companies as provided in the Value Line
12 Investment Survey. The average beta for my proxy group is 0.82 (I&E Exhibit
13 No. 2, Schedule 9).

14
15 **Q. WHAT RISK-FREE RATE OF RETURN HAVE YOU USED FOR YOUR**
16 **FORECASTED CAPM ANALYSIS?**

17 A. I used the risk-free rate of return (R_f) from the projected yield on 10-year Treasury
18 Notes. While the yield on the short-term T-Bill is a more theoretically correct
19 parameter to represent a risk-free rate of return, it can be extremely volatile. The
20 volatility of short-term T-Bills is directly influenced by Federal Reserve policy.
21 At the other extreme, the 30-year Treasury Bond exhibits more stability but is not
22 risk-free. Long-term Treasury Bonds have substantial maturity risk associated

1 with market risk and the risk of unexpected inflation. Long-term treasuries
2 normally offer higher yields to compensate investors for these risks. As a result, I
3 used the yield on the 10-year Treasury Note because it mitigates the shortcomings
4 of the other two alternatives. Additionally, the Commission has recently
5 recognized the 10-year Treasury Note as the superior measure of the risk-free rate
6 of return.⁴ The forecasted yield on the 10-year Treasury Note, as can be seen in
7 Blue Chip Financial Forecasts, is expected to be between 0.80% and 1.20% from
8 the third quarter of 2020 through the third quarter of 2021, and it is forecasted to
9 be 2.30% from 2022-2026. For my forecasted CAPM analysis, I used 1.22%,
10 which is the average of all the yield forecasts I observed (I&E Exhibit No. 2,
11 Schedule 10).

12
13 **Q. HOW DID YOU DETERMINE THE RETURN ON THE OVERALL**
14 **STOCK MARKET IN YOUR FORECASTED CAPM ANALYSIS?**

15 A. To arrive at a representative expected return on the overall stock market, I
16 observed Value Line's 1700 stocks and the S&P 500. Value Line expects its
17 universe of 1700 stocks to have an average yearly return of 12.87% over the next
18 three to five years based on a forecasted dividend yield of 2.20% and a yearly
19 index appreciation of 50%. The S&P 500 index is expected to have an average
20 yearly return of 7.83% over the next five years based upon Barron's forecasted

⁴ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018).
See generally Disposition of Capital Asset Pricing Model (CAPM), p. 99.

1 dividend yield of 2.03% and Yahoo!'s and Morningstar's average expected
2 increase in the S&P 500 index of 5.80% (I&E Exhibit No. 2, Schedule 11).

3
4 **Q. WHAT IS THE EXPECTED RETURN ON THE OVERALL STOCK**
5 **MARKET BASED ON YOUR FORECASTED ANALYSIS?**

6 A. The expected return on the overall market is 10.35% for my forecasted analysis
7 (I&E Exhibit No. 2, Schedule 11).

8
9 **Q. WHAT IS THE COST OF EQUITY RESULT FROM YOUR CAPM**
10 **ANALYSIS?**

11 A. The result of my analysis is as follows (I&E Exhibit No. 2, Schedule 12):

$$\begin{aligned} K &= R_f + \beta(R_m - R_f) \\ 8.72\% &= 1.22\% + 0.82(10.35\% - 1.22\%) \end{aligned}$$

14
15 **CRITIQUE OF MR. MOUL'S PROPOSED COST OF EQUITY**

16 **Q. DO YOU AGREE WITH MR. MOUL'S PROPOSED COST OF**
17 **EQUITY?**

18 A. No. I disagree with Mr. Moul's proposed cost of equity analysis for several
19 reasons. First, I disagree with the weights given to the results of Mr. Moul's
20 CAPM, RP, and CE analyses in his recommendation. Second, I disagree with
21 certain aspects of Mr. Moul's discussion of Columbia's risk. Third, I disagree
22 with his application of the DCF including the forecasted growth rate and leverage

1 adjustment he uses. Fourth, I disagree with his inclusion of a size adjustment, his
2 reliance on the 30-year Treasury Bond for his risk-free rate, and the use of a
3 double-adjusted beta in his CAPM analysis. Finally, Mr. Moul's request for an
4 additional 20 basis points for "strong management performance" is unjustified.

5
6 **WEIGHTS GIVEN TO THE CAPM, RP, AND CE METHODS**

7 **Q. DO YOU AGREE WITH MR. MOUL'S RELIANCE ON THE CAPM AND**
8 **RP MODELS?**

9 A. No. While I am not opposed to providing the Commission the results of the
10 CAPM for a point of comparison to the results of the DCF calculation, I am
11 opposed to giving the CAPM and RP considerable weight. For the reasons
12 discussed above, including my reference to recent Commission orders, it is not
13 appropriate to give the CAPM and RP models similar weight to the DCF as Mr.
14 Moul has done in creating his recommended cost of equity range (Columbia
15 Statement No. 8, p. 5, line 2). As discussed above, the CAPM measures the cost
16 of equity indirectly and can be manipulated by the time period chosen. Since the
17 RP is a simplified version of the CAPM, it suffers these same flaws.

18
19 **Q. DO YOU AGREE WITH MR. MOUL'S USE OF THE CE METHOD?**

20 A. No. The companies in Mr. Moul's analysis are not utilities, and therefore, they are
21 too dissimilar to be used in a CE analysis. The companies in Mr. Moul's CE

1 proxy group are simply not comparable to gas utilities in terms of their business
2 risk or financial risk profile. Natural gas distribution companies are monopolies,
3 which are subject to very little competition, if any. Due to this minimal
4 competition, utilities in general have very low business risk and are able to
5 maintain higher financial risk profiles by employing more leverage. Conversely,
6 since the companies in Mr. Moul’s CE proxy group operate in an unregulated
7 competitive environment with a higher level of business risk, they must maintain
8 lower financial risk profiles by employing a smaller amount of leverage.

9 Furthermore, in his CE analysis, Mr. Moul states, “I used 20% as the point where
10 those returns could be viewed as highly profitable and should be excluded from
11 the Comparable Earnings approach” (Columbia Statement No. 8, p. 42, lines 21-
12 23). It is my opinion the arbitrary use of 20% is unjustified as I am unaware of
13 any gas utility company that has been awarded or regularly earns a 20% return.
14

15 **RISK ANALYSIS**

16 **Q. SUMMARIZE MR. MOUL’S CLAIMS REGARDING RISK FACTORS**
17 **THE COMPANY FACES.**

18 A. Mr. Moul describes the Company’s claimed risk factors in two different sub-
19 sections. In the first section, labeled “Natural Gas Risk Factors,” he describes the
20 *qualitative* risk factors. In this section, Mr. Moul discusses the potential for
21 bypass, the Company’s construction program, the potential discontinuation of the
22 Company’s weather normalization adjustment (WNA) tariff design and/or the

1 refusal of its revenue normalization adjustment (RNA) proposal (Columbia
2 Statement No. 8, p. 5, line 13 through p. 10, line 7). In the second section of his
3 risk analysis, labeled “Fundamental Risk Analysis,” he describes the *quantitative*
4 risk factors. In this section, Mr. Moul discusses the Company’s credit quality, as
5 well as many different financial metrics including size, market ratios, common
6 equity ratio, return on book equity, operating ratios, pre-tax interest coverage,
7 quality of earnings, internally generated funds, and betas (Columbia Statement No.
8 8, p. 10, line 8 through p. 15, line 16).

9
10 **Q. WHAT ARE MR. MOUL’S CLAIMS REGARDING THE POTENTIAL**
11 **RISK OF BYPASS?**

12 A. Mr. Moul opines that the Company faces a unique situation in Western
13 Pennsylvania where gas utilities have overlapping territories; this creates “gas on
14 gas” competition. He claims that the six interstate pipelines traversing the
15 Company’s service territory create the potential for bypass among certain large
16 volume customers. Additionally, Mr. Moul claims that local gas production
17 provides another bypass threat, as well as the consolidation of competing Local
18 Distribution Companies which form a strong competitor (Columbia Statement
19 No. 8, p. 6, lines 7-18).

1 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL’S CLAIMED RISK OF**
2 **BYPASS FOR COLUMBIA?**

3 A. The Western Pennsylvania market is unique in that the overlapping territories
4 create “gas on gas” competition; however, whatever competition exists is limited
5 to a very small number of competitors and only in overlapping territories. Mr.
6 Moul did not provide the number of potential customers affected, nor did he reveal
7 the size of Columbia’s territory that is overlapped by NGDC competitors.
8 Additionally, to the degree that customers must absorb switching costs to move
9 from one NGDC to another, competition will be discouraged. Because
10 insufficient information has been provided, the risk of bypass in overlapping
11 territories cannot be substantiated. Beyond the claimed risk of bypass resulting
12 from overlapping territories of competitors, Columbia faces no more risk than any
13 of the companies in the proxy group. The cost of equity measured by the proxy
14 group adequately compensates investors for the risk of bypass.

15
16 **Q. WHAT CLAIM DOES MR. MOUL MAKE REGARDING THE**
17 **COMPANY’S RISK EXPOSURE IN REPLACING AGING**
18 **INFRASTRUCTURE?**

19 A. Mr. Moul claims that the Company incurs additional risk because required capital
20 expenditures to replace aging infrastructure do not increase the Company’s
21 customer base (Columbia Statement No. 8, p. 9, lines 3-5). The Company
22 anticipates total capital expenditures over the next five years will equal 93% of the

1 net utility plant service at December 31, 2018 (Columbia Statement No. 8, p. 9,
2 lines 11-13).

3
4 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL'S CLAIM REGARDING**
5 **THE COMPANY'S RISK CAUSED BY THE REPLACEMENT OF AGING**
6 **INFRASTRUCTURE?**

7 A. Every gas utility faces the same issues of upgrading or replacing its infrastructure.
8 As costs for replacing infrastructure increase, Columbia, like any other regulated
9 gas utility, has the option to file a base rate case at any time to address revenue
10 inadequacy due to increasing costs, infrastructure replacement, or any other
11 associated issues. Base rate cases allow a utility to recover its costs and provide it
12 with the *opportunity* to earn a reasonable return on capital investments.
13 Additionally, as Mr. Moul states in his testimony, the Commission offers risk
14 reducing mechanisms such as the Distribution System Improvement Charge and
15 the FPFTY to help reduce any regulatory lag in recovery of infrastructure
16 investment or other unforeseen expenditures (Columbia Statement No. 8, p. 7,
17 lines 16-25). It should be noted that these mechanisms were not designed to
18 eliminate the need for periodic base rate case filings.

1 **Q. WHAT RISK HAS MR. MOUL CLAIMED WITH RESPECT TO THE**
2 **POTENTIAL DISCONTINUATION OF THE WEATHER**
3 **NORMALIZATION ADJUSTMENT MECHANISM AND REFUSAL OF**
4 **THE REVENUE NORMALIZATION ADJUSTMENT?**

5 A. Mr. Moul states that, “If the Company is unable to continue with its WNA rate
6 design and is not authorized to adopt the RNA mechanism, its risk will increase
7 above that of the Gas Group that serves as a basis to measure the Company’s cost
8 of equity...” (Columbia Statement No. 8, p. 7, lines 11-15).

9

10 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL’S CLAIM REGARDING**
11 **THE COMPANY’S INCREASED RISK AS A RESULT OF**
12 **DISCONTINUING THE WNA MECHANISM?**

13 A. The Commission allows utilities the opportunity to propose alternative ratemaking
14 mechanisms, and Columbia has requested continuation of its WNA, albeit with
15 modification, and proposed an RNA in this proceeding. I am not aware of any
16 reason the WNA mechanism cannot be renewed. The Company currently does not
17 have an RNA mechanism in place; therefore, its refusal will not increase risk to
18 the Company. However, if the Commission approves the Company’s RNA
19 proposal, its overall risk will decrease as a result. I&E’s position on Columbia’s
20 specific requests regarding the WNA and RNA proposals are addressed in the
21 testimony of I&E witness Cline in I&E Statement No. 3. Further, Mr. Moul has
22 not produced evidence demonstrating that the Gas Group companies employ either

1 the WNA mechanism that is already authorized for Columbia, nor the RNA
2 mechanism that Columbia has proposed.

3
4 **Q. WHAT ARE MR. MOUL’S CLAIMS REGARDING QUANTITATIVE**
5 **RISK FACTORS IN THE SECTION LABELED “FUNDAMENTAL RISK**
6 **ANALYSIS?”**

7 A. Mr. Moul states that it is necessary to establish a company’s relative risk position
8 within its industry through an analysis of quantitative and qualitative factors. Mr.
9 Moul uses various financial metrics to compare Columbia to the S&P Public
10 Utilities Index, and his Gas Group (Columbia Statement No. 8, p. 10, lines 9-18).

11
12 **Q. WHAT IS YOUR RESPONSE REGARDING MR. MOUL’S**
13 **“FUNDAMENTAL RISK ANALYSIS?”**

14 A. One of the points he discusses, size risk, has been discussed and disputed
15 elsewhere in my direct testimony. Throughout the remainder of his “fundamental
16 risk analysis,” Mr. Moul makes several statements to indicate that the Company
17 has no more of a risk than any other company in his Gas Group. First, while
18 discussing the common equity ratio, Mr. Moul states, “The five-year average
19 common equity ratios, based on permanent capital, were 55.5% for CPA, 53.2%
20 for the Gas Group, and 43.0% for the S&P Public Utilities. The Company’s
21 common equity was fairly similar to the Gas Group, thereby indicating similar
22 risk.” (Columbia Statement No. 8, p. 13, lines 3-6). Second, regarding operating

1 ratios, Mr. Moul states, “The five-year average operating ratios were 75.5% for the
2 Company, 84.7% for the Gas Group, and 79.0% for the S&P Public Utilities. The
3 Company's operating ratios were somewhat lower than the Gas Group, thereby
4 indicating lower risk.” (Columbia Statement No. 8, p. 13, lines 17-20). Third,
5 concerning coverage, he states, “Excluding Allowance for Funds Used During
6 Construction (“AFUDC”), the five-year average pre-tax interest coverage was
7 4.64 times for the Company, 4.41 times for the Gas Group, and 3.32 times for the
8 S&P Public Utilities. The interest coverages were fairly similar for the Company
9 and the Gas Group, thereby indicating similar risk” (Columbia Statement No. 8, p.
10 14, lines 1-5). Finally, concerning internally generated funds, he states,
11 “Historically, the five-year average percentage of IGF to capital expenditures was
12 66.5% for the Company, 66.6% for the Gas Group and 78.6% for the S&P
13 Utilities. Had the Company paid dividends in recent years, its IGF would have
14 been weaker. The Company’s average IGF to construction percentage has been
15 similar to that of the Gas Group, thereby signifying similar risk (Columbia
16 Statement No. 8, p. 14, lines 15-19).

17 While some measures Mr. Moul discusses may imply a higher risk profile
18 for the Company, he provides other more convincing measures that illustrate the
19 Company has lower risk. Overall, through his own analysis and testimony, Mr.
20 Moul substantiates that the Company has very similar risk, or arguably, even
21 lower risk as compared to that of his Gas Group.

1 **COST OF EQUITY ADJUSTMENTS**

2 **INFLATED GROWTH RATES USED IN DCF ANALYSIS**

3 **Q. WHAT GROWTH RATE HAS MR. MOUL USED IN HIS DCF**
4 **ANALYSIS?**

5 A. Mr. Moul has chosen a growth rate of 7.50% (Columbia Statement No. 8, p. 30,
6 line 18).

7
8 **Q. WHAT IS THE BASIS FOR MR. MOUL’S GROWTH RATE?**

9 A. Mr. Moul states, “Schedule 9 indicates that the projected earnings per share
10 growth rates for the Gas Group are 5.24% by IBES/First Call, 6.59% by Zacks,
11 7.00% by Morningstar and 10.17% by Value Line.” (Columbia Statement No. 8, p.
12 25, lines 1-3). Mr. Moul used 7.50% growth rate claiming that continued
13 infrastructure spending argues for a DCF growth rate near the high end of the
14 range (Columbia Statement No. 8, p. 26, lines 11-12).

15
16 **Q. DO YOU AGREE WITH MR. MOUL’S GROWTH RATE ANALYSIS?**

17 A. No. As explained above, I disagree with Mr. Moul’s inclusion of Value Line’s
18 26.50% growth estimate for Northwest Natural Gas Co.

1 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS REGARDING THE**
2 **RESULTS OF MR. MOUL’S PROJECTED GROWTH RATES?**

3 A. Yes. While the five-year projected growth rates can be used in analyses, one must
4 be aware that analysts’ estimates may be biased. This bias has been observed in
5 literature. An article written by Professors Ciciretti, Dwyer, and Hasan in 2009
6 observed strong support of earnings forecasts being higher than actual earnings.⁵
7 In spring of 2010, McKinsey On Finance presented an article reporting that after a
8 decade of stricter regulation analysts’ forecasts are still overly optimistic.⁶

9 Analysts’ estimates are an attempt to forecast future cash flows and thus
10 expected earnings growth. However, it should be kept in mind that prudent
11 judgment must be exercised as to the sustainability of forecasted growth rates with
12 respect to the base earnings. If the base year earnings are abnormally high, the
13 growth rates from which they are calculated will be biased downward. Similarly,
14 if the base year earnings are abnormally low, the growth rates from which they are
15 calculated will be biased upward. As a result, it is typically necessary to employ a
16 methodology to smooth out the abnormally high or low base year earnings.

⁵ Ciciretti, Rocco; Dwyer, Gerald R; and Iftekhan Hasan. “Investment Analysts’ Forecasts of Earnings” Federal Reserve Bank of St. Louis Review, September/October 2009, 91 (5, part 2) pp. 545-67.

⁶ Goedhart, Marc J; Raj, Rishi; and Abhishek Saxena. “Equity analyst: Still too bullish” McKinsey On Finance Number 35 Spring 2010, pp. 14-17.

1 LEVERAGE ADJUSTMENT APPLIED TO DCF ANALYSIS

2 **Q. HAS MR. MOUL MADE ANY ADDITIONAL ADJUSTMENTS TO THE**
3 **RESULT OF HIS DCF ANALYSIS?**

4 A. Yes. Mr. Moul proposes to make a 172-basis point “leverage” adjustment to the
5 results of his DCF analysis to account for applying a market-determined cost of
6 equity to a book value capital structure (Columbia Statement No. 8, p. 30, lines 6-
7 8).

8
9 **Q. WHAT IS FINANCIAL LEVERAGE?**

10 A. Financial leverage is the use of debt capital to supplement equity capital. A firm
11 with significantly more debt than equity is considered to be highly leveraged.

12
13 **Q. WHAT IS A MARKET-TO-BOOK (M/B) RATIO?**

14 A. A market-to-book ratio is used to evaluate a public firm’s equity value by
15 comparing the market value and book value of a company’s equity. One way of
16 doing this is to divide the current price per share of stock by the book value per
17 share. A M/B result of above one (1) is desired.

18
19 **Q. DOES MR. MOUL PROPOSE TO ADJUST THE RESULT OF HIS DCF**
20 **ANALYSIS TO RECOGNIZE HOW THE COMPANY IS LEVERAGED?**

21 A. No. Mr. Moul does not propose to change the capital structure of the utility (a
22 leverage adjustment), nor does he propose to apply the market-to-book ratio to the

1 DCF model (a market-to-book adjustment). Instead, Mr. Moul proposes to make
2 an adjustment to account for applying the market value cost rate of equity to the
3 book value of the utility's equity. I am not aware of any term in academic
4 journals, textbooks, or other literature that describes this type of adjustment.
5

6 **Q. WHAT IS THE BASIS FOR MR. MOUL'S PROPOSED LEVERAGE**
7 **ADJUSTMENT?**

8 A. Mr. Moul states that in order to make the DCF results relevant to a book value
9 capital structure, the market-derived cost of equity needs to be adjusted to take
10 into consideration the difference in financial risk (Columbia Statement No. 8,
11 p. 27, lines 3-5). Mr. Moul opines this is because market valuations of equity are
12 based on market value capital structures, which in general have more equity, less
13 debt, and therefore, less risk than book value capital structures (Columbia
14 Statement No. 8, p. 26, line 21 through p. 27, line 1).
15

16 **Q. HOW DOES MR. MOUL ATTEMPT TO JUSTIFY THE LEVERAGE**
17 **ADJUSTMENT USED IN HIS ANALYSIS?**

18 A. Mr. Moul simply states:

19 I know of no means to mathematically solve for the 1.72%
20 leverage adjustment by expressing it in the terms of any
21 particular relationship of market price to book value. The
22 1.72% adjustment is merely a convenient way to compare the
23 11.91% return computed directly with the Modigliani & Miller
24 formulas to the 10.19% return generated by the DCF model
25 based on a market value capital structure.⁷

⁷ Columbia Statement No. 8, p. 29, line 24 through p. 30, line 4.

1 **Q. BASED ON THE COMPANY’S FILED RATE BASE AND CLAIMED**
2 **CAPITAL STRUCTURE, WHAT IS THE VALUE OF AN ADDITIONAL**
3 **172 BASIS POINTS TO THE COST OF EQUITY?**

4 A. The example below illustrates the impact of 172 additional basis points to the
5 Company’s cost of equity:

| Columbia Gas of Pennsylvania, Inc. | |
|--|----------------------------|
| Claimed Equity Percentage of Capital Structure | 54.19% |
| Additional Basis Points to Calculated Cost of Equity | 172 |
| <u>Claimed Rate Base*</u> | <u>\$2,401,427,019</u> |
| Total Impact | <u>\$22,382,933</u> |

(0.5419 x 0.0172 x \$2,401,427,019)

*(Columbia Exhibit 102, Schedule 3, p. 3)

6
7 In this example, an addition of 172 basis points to the cost of equity would force
8 ratepayers to fund an unwarranted additional amount of \$22,382,933.

9
10 **Q. DO YOU AGREE WITH MR. MOUL’S “LEVERAGE ADJUSTMENT”**
11 **JUSTIFICATION?**

12 A. No. Mr. Moul’s adjustment is inappropriate for a couple of reasons, including the
13 characterization of financial risk and Commission precedent.

1 **Q. EXPLAIN HOW RATING AGENCIES ASSESS FINANCIAL RISK.**

2 A. Rating agencies assess financial risk based upon a company’s booked debt
3 obligations and the ability of its cash flow to cover the interest payments on those
4 obligations. The agencies use a company’s financial statements for their analysis,
5 not market capital structure. The income statement reflects the financial risk of a
6 company because it represents the performance of the company over a certain
7 period of time. A change in the market value of the stock is not reflected in the
8 income statement nor is a change in market value capital structure reflected in the
9 book value capital structure unless treasury stock is purchased. It is a company’s
10 financial statements that affect the market value of the stock, and therefore, the
11 financial statements and the book value capital structure that is relied upon in an
12 analysis such as that done by rating agencies.

13

14 **Q. HAS THE COMMISSION RECENTLY REJECTED THE USE OF A**
15 **LEVERAGE ADJUSTMENT?**

16 A. Yes. The following three cases are the most recent instances where the
17 Commission has rejected the use of a “leverage adjustment.”

18 First, in *Pennsylvania Public Utility Commission v. Aqua Pennsylvania,*
19 *Inc.*, at Docket No. R-00072711 (Order Entered July 31, 2008), p. 38, the
20 Commission rejected the ALJ’s recommendation for a leverage adjustment stating,
21 “[t]he fact that we have granted leverage adjustments in the past does not mean
22 that such adjustments are indicated in all cases.”

1 Second, in *Pennsylvania Public Utility Commission, et al v. City of*
2 *Lancaster – Bureau of Water*, at Docket No. R-2010-2179103 (Order Entered
3 July 14, 2011), p. 79, the Commission agreed with the I&E position and stated,
4 “any adjustment to the results of the market based DCF are unnecessary and will
5 harm ratepayers. Consistent with our determination in *Aqua 2008* there is no need
6 to add a leverage adjustment.”

7 Third, in the most recent case of *Pennsylvania Public Utility Commission,*
8 *et al v. UGI Utilities, Inc. – Electric Division*, at Docket No. R-2017-2640058
9 (Order Entered October 25, 2018), pp. 93-94, the Commission agreed with the
10 I&E position and stated, “we conclude that an artificial adjustment in this
11 proceeding is unnecessary and contrary to the public interest. Accordingly, we
12 decline to include a leverage adjustment in our calculation of the DCF cost of
13 equity.”

14
15 **Q. SUMMARIZE YOUR RECOMMENDATION REGARDING THE**
16 **PROPOSED LEVERAGE ADJUSTMENT.**

17 A. I recommend that Mr. Moul’s proposed 172-basis point leverage adjustment be
18 rejected because true financial risk is a function of the amount of interest expense,
19 and capital structure information provided to investors through Value Line is that
20 of book values, not market values. This demonstrates that investors base their
21 decisions on book value debt and equity ratios for the regulated utilities, and

1 therefore, no adjustment is needed. Mr. Moul's proposed adjustments serve only
2 to manipulate the DCF's market-based methodology.

3
4 **Q. WHAT WOULD MR. MOUL'S DCF BE WITHOUT ANY**
5 **ADJUSTMENTS?**

6 A. Without Mr. Moul's use of inflated growth rates and a leverage adjustment, his
7 DCF would consist of his calculated dividend yield of 2.69%, which is lower than
8 what I have calculated, and my average growth rate of 6.52% as shown above,
9 which results in a 9.21% cost of equity.

10
11 INFLATED BETAS USED IN CAPM ANALYSIS

12 **Q. HOW HAS MR. MOUL INFLATED THE BETAS EMPLOYED IN HIS**
13 **CAPM ANALYSIS?**

14 A. Mr. Moul has used the same logic for inflating his CAPM betas from 0.66 to 0.83
15 that he used to enhance his DCF returns, through a financial risk or "leverage"
16 adjustment (Columbia Statement No. 8, p. 35, line 21 through p. 36, line 16).
17 Such enhancements are unwarranted for beta in a CAPM analysis for the same
18 reasons that enhancements are unwarranted for DCF results.

19 Also, if the unadjusted *Value Line* betas do not reflect an accurate
20 investment risk as Mr. Moul contends, the question naturally arises as to why
21 *Value Line* does not publish betas that are adjusted for leverage. Until this type of
22 adjustment is demonstrated in the academic literature to be valid, such leverage

1 adjusted betas in a CAPM model should be rejected. Furthermore, the
2 Commission found no basis to add leverage adjusted betas in the recently litigated
3 UGI Electric base rate case.⁸

4
5 SIZE ADJUSTMENT APPLIED TO CAPM ANALYSIS

6 **Q. WHAT IS MR. MOUL’S SIZE ADJUSTMENT?**

7 A. Mr. Moul adds 102 basis points to his CAPM indicated cost of common equity
8 because he opines that as the size of a firm decreases, its risk and required return
9 increases (Columbia Statement No. 8, p. 39, lines 14-15). Mr. Moul relies upon
10 technical literature including Morningstar’s Stocks, Bonds, Bills, and Inflation
11 Yearbook, a Fama and French study entitled “The Cross-Section of Expected
12 Stock Returns,” and an article published in Public Utilities Fortnightly entitled
13 “Equity and the Small-Stock Effect” (Columbia Statement No. 8, p. 39, lines 15-
14 24).

15
16 **Q. DO YOU AGREE WITH MR. MOUL’S SIZE ADJUSTMENT?**

17 A. No. Mr. Moul’s size adjustment is unnecessary because the technical literature he
18 cites supporting investment adjustments related to the size of a company is not
19 specific to the utility industry; therefore, it has no relevance in this proceeding.

⁸ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018).
See generally Disposition of Capital Asset Pricing Model (CAPM), p. 100.

1 **Q. IS THERE ACADEMIC EVIDENCE THAT SUPPORTS YOUR**
2 **CONCLUSION THAT THE SIZE ADJUSTMENT FOR RISK IS NOT**
3 **APPLICABLE TO UTILITY COMPANIES?**

4 A. Yes. In the article “Utility Stocks and the Size Effect: An Empirical Analysis,”
5 Dr. Annie Wong concludes:

6 The objective of this study is to examine if the size effect exists
7 in the utility industry. After controlling for equity values, there
8 is some weak evidence that firm size is a missing factor from
9 the CAPM for the industrial but not for utility stocks. This
10 implies that although the size phenomenon has been strongly
11 documented for the industriales, the findings suggest that there
12 is no need to adjust for the firm size in utility rate regulation.⁹

13 Columbia presents no evidence to support application of a non-utility study
14 regarding a size adjustment for risk to a utility setting. Absent any credible article
15 to refute Dr. Wong’s findings, Mr. Moul’s size adjustment to his CAPM results
16 should be rejected. Additionally, and more importantly, the Commission has
17 recently rejected the application of a size adjustment to the CAPM cost of equity
18 calculation.¹⁰

⁹ Dr. Annie Wong, “Utility Stocks and the Size Effect: An Empirical Analysis,” *Journal of Midwest Finance Association* 1993, pp. 95-101.

¹⁰ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). See generally Disposition of Capital Asset Pricing Model (CAPM), p. 100.

1 **Q. WHAT WOULD MR. MOUL’S CAPM RESULT BE WITHOUT THE SIZE**
2 **ADJUSTMENT AND INFLATED BETAS?**

3 A. Mr. Moul’s CAPM result would be 7.86% without his size adjustment and inflated
4 betas. The calculation is repeated below without Mr. Moul’s adjustments:

5 $R_f + \beta * (R_m - R_f) + \text{size} = K$
6 2.75% + 0.66 * 7.74% + 0.00% = 7.86%

7

8 MANAGEMENT PERFORMANCE

9 **Q. WHAT IS THE COMPANY’S CLAIM REGARDING MANAGEMENT**
10 **PERFORMANCE.**

11 A. Mr. Moul explains that his 10.95% cost of equity recommendation includes 20
12 basis points in consideration of the Company’s exemplary management
13 performance (Columbia Statement No. 8, p. 5, lines 7-10). The Company’s
14 rationale to support its management performance claim includes Columbia’s
15 management performance is demonstrated through among other things, its
16 enhanced safety measures, accelerated infrastructure replacement plan, superior
17 results in PUC Management Performance Audit and PUC UCARE reports, its
18 PAR rate, Quality of Service Performance report, and its result in the 2019 J.D.
19 Power Residential Customer Satisfaction Survey (Columbia Statement No. 1, p.
20 18, line 14 through p. 39, line 9).

1 **Q. BASED ON THE COMPANY’S FILED RATE BASE AND CLAIMED**
2 **CAPITAL STRUCTURE, WHAT IS THE VALUE OF AN ADDITIONAL 20**
3 **BASIS POINTS TO THE COST OF EQUITY?**

4 A. The example below illustrates the impact of 20 additional basis points to the
5 Company’s cost of equity:

| Columbia Gas of Pennsylvania, Inc. | |
|--|---------------------------|
| Claimed Equity Percentage of Capital Structure | 54.19% |
| Additional Basis Points to Calculated Cost of Equity | 20 |
| <u>Claimed Rate Base*</u> | <u>\$2,401,427,019</u> |
| Total Impact | <u>\$2,602,667</u> |

(0.5419 x 0.0020 x \$2,401,427,019)

*(Columbia Exhibit 102, Schedule 3, p. 3)

6
7 In this example, an addition of 20 basis points to the cost of equity would force
8 ratepayers to fund an unwarranted additional amount of \$2,602,667.

9
10 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIMS REGARDING**
11 **MANAGEMENT EFFECTIVENESS?**

12 A. No. Although the Company touts its Management Audit scores against other
13 NGDC’s it is not to say that the Company does not have room for improvement.
14 According to the Commission’s recently issued Management and Operations

1 Audit for Columbia Gas of Pennsylvania, Inc. (Issued in June 2020) at Docket No.
2 D-2019-3011582, the following deficits are illustrated regarding Columbia’s
3 customer service:

- 4 • Page 53 – Columbia’s metering and billing policies and procedures are
5 outdated;
- 6 • Page 53 – Columbia’s average arrearages were higher throughout the
7 audit period compared to a panel average of Pennsylvania natural gas
8 distribution companies;
- 9 • Page 56 – Columbia’s revenue recovery has not developed net
10 collection performance goals with which to manage its third-party
11 collection efforts;
- 12 • Page 58 – NiSource Corporate Services Company does not have a
13 documented theft of service program; and
- 14 • Page 58 – Columbia’s customer service representative turnover is higher
15 than at other like utilities.

16 Unlike other areas, customer service is an area of management and operations over
17 which the Company has complete and direct control. By awarding the Company
18 management effectiveness points, it will cost the customer money for service that
19 can and should be improved. Any savings from effective operating and
20 maintenance cost measures should flow through to ratepayers and/or investors.
21 These claimed savings would likely be offset by the addition of basis points for
22 management effectiveness as ratepayers would have to fund the additional costs.

1 This defeats the purpose of cutting expenses to benefit ratepayers. Ensuring that
2 these cost saving measures flow to ratepayers is especially important now as many
3 have recently experienced reduced household income as a result of job loss or
4 reduction in hours due to the global pandemic.

5
6 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE**
7 **CONSIDERATION OF 20 ADDITIONAL BASIS POINTS FOR THE**
8 **COMPANY'S MANAGEMENT PERFORMANCE?**

9 A. Ultimately, for any company, true management effectiveness is earning a higher
10 return through its efficient use of resources and cost cutting measures. The greater
11 net income resulting from cost savings and true efficiency in management and
12 operations is available to be passed on to shareholders. Columbia, or any utility
13 should not be awarded additional basis points for doing what they are required to
14 do in order to provide adequate, efficient, safe, and reasonable service under 66 Pa
15 C.S.A. §1501. For these reasons, I recommend that there be no addition of basis
16 points to the cost of equity for management effectiveness.

1 **OVERALL RATE OF RETURN RECOMMENDATION**

2 **Q. WHAT IS THE COMPANY'S PROPOSED OVERALL RATE OF**
3 **RETURN?**

4 A. The Company's proposed overall rate of return is 7.98% (Columbia Statement
5 No. 8, p. 2, line 2).

6

7 **Q. WHAT IS I&E'S RECOMMENDED OVERALL RATE OF RETURN?**

8 A. I recommend an overall rate of return for the Company of 7.39% (I&E Exhibit
9 No. 2, Schedule 1).

10

11 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

12 A. Yes.

CHRISTOPHER KELLER

PROFESSIONAL AND EDUCATIONAL EXPERIENCE

Professional Experience

January 2014 to Present
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
Bureau of Investigation & Enforcement

September 2008 to January 2014
Insurance Company Financial Analyst
Pennsylvania Insurance Department, Harrisburg, Pennsylvania
Bureau of Licensing & Financial Analysis

Education and Training

FAI Utility Finance and Accounting for Financial Professionals, Boston, MA
May 21-23, 2014

York College of Pennsylvania, York, Pennsylvania
Master of Business Administration, Finance Concentration, 2008
Bachelor of Science, Accounting, 2006

Testimony Submitted

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2020-3019680 – UGI Utilities, Inc. (1307(f)) (proceeding ongoing)
- Docket No. P-2020-3019356 – PPL Electric Utilities Corporation (DSP) (proceeding ongoing)
- Docket No. R-2019-3015162 – UGI Utilities, Inc. – Gas Division (ROR) (proceeding ongoing)
- Docket No. R-2019-3010955 – City of Lancaster – Sewer Fund (O&M)
- Docket No. R-2019-3009647 – UGI Utilities, Inc. – Gas Division (1307(f))
- Docket No. R-2018-3006818 – Peoples Natural Gas Company LLC (O&M)
- Docket No. R-2018-3000124 – Duquesne Light Company (O&M)
- Docket No. R-2018-3001631 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2018-3001632 – UGI Penn Natural Gas, Inc. (1307(f))
- Docket No. R-2018-3001633 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2018-2645938 – Philadelphia Gas Works (1307(f))
- Docket No. P-2017-2637855 – Metropolitan Edison Company (DSP)
- Docket No. P-2017-2637857 – Pennsylvania Electric Company (DSP)
- Docket No. P-2017-2637858 – Pennsylvania Power Company (DSP)
- Docket No. P-2017-2637866 – West Penn Power Company (DSP)

Testimony Submitted (Continued)

I have testified and/or submitted testimony in the following proceedings:

- Docket No. I-2016-2526085 – Delaware Sewer Company (529 Proceeding)
- Docket No. R-2017-2602627 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2017-2602638 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2017-2586783 – Philadelphia Gas Works (O&M)
- Docket No. R-2017-2587526 – Philadelphia Gas Works (1307(f))
- Docket No. R-2016-2531550 – Citizens’ Electric Company (O&M)
- Docket No. R-2016-2531551 – Wellsboro Electric Company (O&M)
- Docket No. R-2016-2537349 – Metropolitan Edison Company (CWC and CAP)
- Docket No. R-2016-2537352 – Pennsylvania Electric Company (CWC and CAP)
- Docket No. R-2016-2537355 – Pennsylvania Power Company (CWC and CAP)
- Docket No. R-2016-2537359 – West Penn Power Company (CWC and CAP)
- Docket No. R-2016-2543311 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2015-2518438 – UGI Utilities, Inc. – Gas Division (CWC and USP)
- Docket No. P-2015-2511333 – Metropolitan Edison Company (DSP)
- Docket No. P-2015-2511351 – Pennsylvania Electric Company (DSP)
- Docket No. P-2015-2511355 – Pennsylvania Power Company (DSP)
- Docket No. P-2015-2511356 – West Penn Power Company (DSP)
- Docket No. R-2015-2468056 – Columbia Gas of Pennsylvania, Inc. (O&M)
- Docket No. P-2014-2404341 – Delaware Sewer Company (529 Investigation)
- Docket No. R-2014-2452705 – Delaware Sewer Company (O&M)
- Docket No. R-2014-2428304 – Borough of Hanover – Water (O&M)
- Docket No. R-2014-2419774 – Wellsboro Electric Company (Customer Choice Support Charge)
- Docket No. R-2014-2420279 – UGI Central Penn Gas, Inc. (1307(f))

Assisted with the Following Cases

- Docket No. R-2017-2631441 – Reynolds Water Company (ROR)
- Docket No. R-2016-2580030 – UGI Penn Natural Gas, Inc. (ROR)
- Docket No. R-2014-2462723 – United Water Pennsylvania (CWC)
- Docket No. R-2014-2428742 – West Penn Power Company (CWC)
- Docket No. R-2014-2428743 – Pennsylvania Electric Company (CWC)
- Docket No. R-2014-2428744 – Pennsylvania Power Company (CWC)
- Docket No. R-2014-2428745 – Metropolitan Edison Company (CWC)
- Docket No. R-2013-2397353 – Pike County Light & Power Company (Gas) (O&M)
- Docket No. R-2013-2397237 – Pike County Light & Power Company (Electric) (O&M)

I&E Exhibit No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Exhibit to Accompany

the

Direct Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

I&E
Summary of Cost of Capital

| Type of Capital | Ratio | Cost Rate | Weighted Cost |
|------------------------------------|----------------|------------------|----------------------|
| <hr/> | | | |
| UGI Utilities, Inc. - Gas Division | | | |
| Long Term Debt | 42.22% | 4.70% | 1.98% |
| Short-Term Debt | 3.59% | 2.06% | 0.07% |
| Common Equity | 54.19% | 9.86% | 5.34% |
| Total | <u>100.00%</u> | | <u><u>7.39%</u></u> |

Proxy Group Capital Structure

| | 2019 | | 2018 | | 2017 | | 2016 | | 2015 | | Average | | | | | |
|--|------|------------|---------|----|------------|---------|------|------------|---------|----|------------|---------|----|------------|---------|---------|
| Atmos Energy Corp | | | | | | | | | | | | | | | | |
| Long-term Debt | \$ | 3,529.452 | 36.22% | \$ | 2,493.665 | 31.81% | \$ | 3,067.045 | 41.37% | \$ | 2,188.779 | 33.77% | \$ | 2,455.388 | 40.20% | 36.67% |
| Short-term Debt | | 464.915 | 4.77% | | 575.780 | 7.34% | | 447.745 | 6.04% | | 829.811 | 12.80% | | 457.927 | 7.50% | 7.69% |
| Common Equity | | 5,750.223 | 59.01% | | 4,769.950 | 60.85% | | 3,898.666 | 52.59% | | 3,463.059 | 53.43% | | 3,194.797 | 52.30% | 55.64% |
| | | 9,744.590 | 100.00% | | 7,839.395 | 100.00% | | 7,413.456 | 100.00% | | 6,481.649 | 100.00% | | 6,108.112 | 100.00% | 100.00% |
| Chesapeake Utilities | | | | | | | | | | | | | | | | |
| Long-term Debt | | 450.064 | 35.75% | | 316.020 | 27.99% | | 197.395 | 21.12% | | 136.954 | 17.27% | | 149.340 | 21.93% | 24.81% |
| Short-term Debt | | 247.371 | 19.65% | | 294.458 | 26.08% | | 250.969 | 26.85% | | 209.871 | 26.47% | | 173.397 | 25.47% | 24.90% |
| Common Equity | | 561.577 | 44.60% | | 518.439 | 45.92% | | 486.294 | 52.03% | | 446.086 | 56.26% | | 358.138 | 52.60% | 50.28% |
| | | 1,259.012 | 100.00% | | 1,128.917 | 100.00% | | 934.658 | 100.00% | | 792.911 | 100.00% | | 680.875 | 100.00% | 100.00% |
| Nisource Inc | | | | | | | | | | | | | | | | |
| Long-term Debt | | 7,907.800 | 53.48% | | 7,105.400 | 50.92% | | 7,512.200 | 57.62% | | 6,058.200 | 52.15% | | 5,948.500 | 57.42% | 54.32% |
| Short-term Debt | | 1,773.200 | 11.99% | | 1,977.200 | 14.17% | | 1,205.700 | 9.25% | | 1,488.000 | 12.81% | | 567.400 | 5.48% | 10.74% |
| Common Equity | | 5,106.700 | 34.53% | | 4,870.900 | 34.91% | | 4,320.100 | 33.13% | | 4,071.200 | 35.04% | | 3,843.500 | 37.10% | 34.94% |
| | | 14,787.700 | 100.00% | | 13,953.500 | 100.00% | | 13,038.000 | 100.00% | | 11,617.400 | 100.00% | | 10,359.400 | 100.00% | 100.00% |
| Northwest Natural Gas Co | | | | | | | | | | | | | | | | |
| Long-term Debt | | 806.796 | 44.28% | | 706.247 | 41.88% | | 683.184 | 46.16% | | 679.334 | 42.91% | | 576.700 | 35.43% | 42.13% |
| Short-term Debt | | 149.100 | 8.18% | | 217.620 | 12.90% | | 54.200 | 3.66% | | 53.300 | 3.37% | | 270.035 | 16.59% | 8.94% |
| Common Equity | | 865.999 | 47.53% | | 762.634 | 45.22% | | 742.776 | 50.18% | | 850.497 | 53.72% | | 780.972 | 47.98% | 48.93% |
| | | 1,821.895 | 100.00% | | 1,686.501 | 100.00% | | 1,480.160 | 100.00% | | 1,583.131 | 100.00% | | 1,627.707 | 100.00% | 100.00% |
| One Gas Inc. | | | | | | | | | | | | | | | | |
| Long-term Debt | | 1,314.064 | 33.18% | | 1,285.483 | 35.44% | | 1,193.257 | 33.99% | | 1,192.446 | 36.97% | | 1,201.305 | 39.32% | 35.78% |
| Short-term Debt | | 516.500 | 13.04% | | 299.500 | 8.26% | | 357.215 | 10.18% | | 145.000 | 4.50% | | 12.500 | 0.41% | 7.28% |
| Common Equity | | 2,129.390 | 53.77% | | 2,042.656 | 56.31% | | 1,960.209 | 55.84% | | 1,888.280 | 58.54% | | 1,841.555 | 60.27% | 56.95% |
| | | 3,959.954 | 100.00% | | 3,627.639 | 100.00% | | 3,510.681 | 100.00% | | 3,225.726 | 100.00% | | 3,055.360 | 100.00% | 100.00% |
| South Jersey Industries Inc | | | | | | | | | | | | | | | | |
| Long-term Debt | | 2,070.767 | 47.68% | | 2,106.863 | 57.81% | | 1,122.999 | 42.19% | | 808.005 | 33.76% | | 1,006.394 | 40.65% | 44.42% |
| Short-term Debt | | 848.700 | 19.54% | | 270.500 | 7.42% | | 346.400 | 13.01% | | 296.100 | 12.37% | | 431.700 | 17.44% | 13.96% |
| Common Equity | | 1,423.785 | 32.78% | | 1,267.022 | 34.77% | | 1,192.409 | 44.80% | | 1,289.240 | 53.87% | | 1,037.539 | 41.91% | 41.62% |
| | | 4,343.252 | 100.00% | | 3,644.385 | 100.00% | | 2,661.808 | 100.00% | | 2,393.345 | 100.00% | | 2,475.633 | 100.00% | 100.00% |
| Spire Inc. | | | | | | | | | | | | | | | | |
| Long-term Debt | | 2,082.600 | 40.62% | | 1,900.100 | 40.35% | | 1,995.000 | 44.69% | | 1,833.700 | 45.84% | | 1,771.500 | 48.10% | 43.92% |
| Short-term Debt | | 743.200 | 14.50% | | 553.600 | 11.76% | | 477.300 | 10.69% | | 398.700 | 9.97% | | 338.000 | 9.18% | 11.22% |
| Common Equity | | 2,301.000 | 44.88% | | 2,255.400 | 47.89% | | 1,991.300 | 44.61% | | 1,768.200 | 44.20% | | 1,573.600 | 42.72% | 44.86% |
| | | 5,126.800 | 100.00% | | 4,709.100 | 100.00% | | 4,463.600 | 100.00% | | 4,000.600 | 100.00% | | 3,683.100 | 100.00% | 100.00% |
| Five-Year Average Capital Structure | | | | | | | | | | | | | | | | |
| Long-term Debt | | | 40.29% | | | | | | | | | | | | | |
| Short-term Debt | | | 12.10% | | | | | | | | | | | | | |
| Common Equity | | | 47.60% | | | | | | | | | | | | | |
| | | | 100.00% | | | | | | | | | | | | | |

Source: Compustat (data in millions)
April 2020

Accessed on June 22, 2020

| | 2019 | | |
|-----------------------------|-----------------|------------------|--------------|
| | Interest | Long-term | Debt |
| | Charges | Debt | Cost |
| Atmos Energy Corp | 110.80 | 3,529.45 | 3.14% |
| Chesapeake Utilities | 22.92 | 450.06 | 5.09% |
| Nisource Inc | 386.40 | 7,907.80 | 4.89% |
| Northwest Natural Gas Co | 42.69 | 806.80 | 5.29% |
| One Gas Inc. | 67.28 | 1,314.06 | 5.12% |
| South Jersey Industries Inc | 120.48 | 2,070.77 | 5.82% |
| Spire Inc. | 104.40 | 2,082.60 | 5.01% |
| | Range: | Low | 3.14% |
| | | High | 5.82% |
| | | Average | 4.91% |

Source: Compustat
April 2020

Accessed on June 22, 2020

Question No. I&E-RR-003
Respondent: P. Moul
Page 1 of 1

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set RR

Question No. I&E-RR-003:

Reference Columbia Statement No. 8, page 17, lines 21-24. Provide the source of the 1.76% LIBOR rate used to calculate the short-term debt cost rate. Also provide the calculation and explanation of the 30-basis point spread used to calculate the short-term debt cost rate.

Response:

Please refer to I&E-RR-003 Attachment A to this response.

Bloomberg 3 Month Libor forecast by Quarter 2020-2021

Enter # <GO> for details
 Chart Export Disclaimer Page 1/3 Bond Yield

Region G7 Spread 2 Year - 10 Year

| Rate | Market Yld | Q1 20 | Q2 20 | Q3 20 | Q4 20 | Q1 21 | Q2 21 | Q3 21 | Q4 21 |
|----------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|
| United States | | | | | | | | | |
| 1) US 30-Year | 2.03 | 2.30 | 2.33 | 2.34 | 2.41 | 2.40 | 2.46 | 2.51 | 2.58 |
| 2) US 10-Year | 1.57 | 1.87 | 1.90 | 1.92 | 1.94 | 1.96 | 2.03 | 2.09 | 2.12 |
| 3) US 5-Year | 1.39 | 1.68 | 1.71 | 1.72 | 1.73 | 1.75 | 1.80 | 1.84 | 1.87 |
| 4) US 2-Year | 1.40 | 1.61 | 1.61 | 1.61 | 1.59 | 1.62 | 1.65 | 1.67 | 1.71 |
| 5) US 3-Month Libor | 1.77 | 1.84 | 1.78 | 1.77 | 1.72 | 1.74 | 1.76 | 1.78 | 1.81 |

Month Libor vs. 3 Month CP indicative

| 2020 Moneypool Rate projection | Rate |
|--------------------------------|--------------|
| Average Forecast | 1.75% |
| Plus 30 BPS spread | 0.30% |
| Projected 2020 ST rate | 2.05% |

2021

| Period | Rate | 2021 Moneypool Rate projection | Rate |
|-----------------------|------|--------------------------------|--------------|
| Q4 2020 | | 1.72 Average Forecast | 1.76% |
| Q1 2021 | | 1.74 Plus 30 BPS spread | 0.30% |
| Q2 2021 | | 1.76 Projected 2021 ST rate | 2.06% |
| Q3 2021 | | 1.78 | |
| Q4 2021 | | 1.81 | |
| Average 2021 forecast | | 1.762% | |

Blue Chip Financial Forecasts[®]

**Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values
And The Factors That Influence Them**

Vol. 39, No. 6, June 1, 2020

Wolters Kluwer

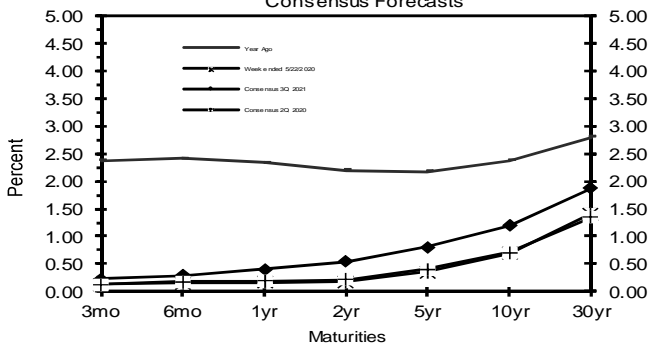
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

| Interest Rates | History | | | | | | | | Consensus Forecasts-Quarterly Avg. | | | | | | |
|-------------------------|-------------------------|--------|-------|-------|-------------------|------|------|---------|------------------------------------|------|------|------|------|------|----|
| | Average For Week Ending | | | | Average For Month | | | | Latest Qtr | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q |
| | May 22 | May 15 | May 8 | May 1 | Apr | Mar | Feb | 1Q 2020 | 2020 | 2020 | 2020 | 2021 | 2021 | 2021 | |
| Federal Funds Rate | 0.05 | 0.05 | 0.05 | 0.04 | 0.05 | 0.65 | 1.58 | 1.26 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | |
| Prime Rate | 3.25 | 3.25 | 3.25 | 3.25 | 3.25 | 3.78 | 4.75 | 4.43 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.4 | |
| LIBOR, 3-mo. | 0.37 | 0.40 | 0.46 | 0.68 | 1.09 | 1.10 | 1.68 | 1.53 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | |
| Commercial Paper, 1-mo. | 0.14 | 0.12 | 0.14 | 0.19 | 0.47 | 1.36 | 1.55 | 1.49 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | |
| Treasury bill, 3-mo. | 0.12 | 0.12 | 0.12 | 0.11 | 0.14 | 0.30 | 1.54 | 1.13 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | |
| Treasury bill, 6-mo. | 0.15 | 0.15 | 0.15 | 0.13 | 0.17 | 0.30 | 1.51 | 1.12 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | |
| Treasury bill, 1 yr. | 0.16 | 0.15 | 0.16 | 0.17 | 0.18 | 0.33 | 1.41 | 1.09 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | |
| Treasury note, 2 yr. | 0.17 | 0.16 | 0.17 | 0.21 | 0.22 | 0.45 | 1.33 | 1.10 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | |
| Treasury note, 5 yr. | 0.35 | 0.33 | 0.34 | 0.37 | 0.39 | 0.59 | 1.32 | 1.16 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | |
| Treasury note, 10 yr. | 0.69 | 0.67 | 0.67 | 0.64 | 0.66 | 0.87 | 1.50 | 1.38 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | |
| Treasury note, 30 yr. | 1.41 | 1.36 | 1.34 | 1.25 | 1.27 | 1.46 | 1.97 | 1.88 | 1.4 | 1.5 | 1.5 | 1.7 | 1.8 | 1.9 | |
| Corporate Aaa bond | 2.82 | 2.94 | 2.89 | 2.77 | 2.86 | 3.11 | 2.85 | 3.00 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | |
| Corporate Baa bond | 3.66 | 3.81 | 3.74 | 3.68 | 3.87 | 4.11 | 3.50 | 3.76 | 4.0 | 4.0 | 4.0 | 4.2 | 4.2 | 4.3 | |
| State & Local bonds | 3.26 | 3.37 | 3.46 | 3.50 | 3.41 | 3.29 | 2.93 | 3.07 | 2.5 | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 | |
| Home mortgage rate | 3.24 | 3.28 | 3.26 | 3.23 | 3.31 | 3.45 | 3.47 | 3.51 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.4 | |

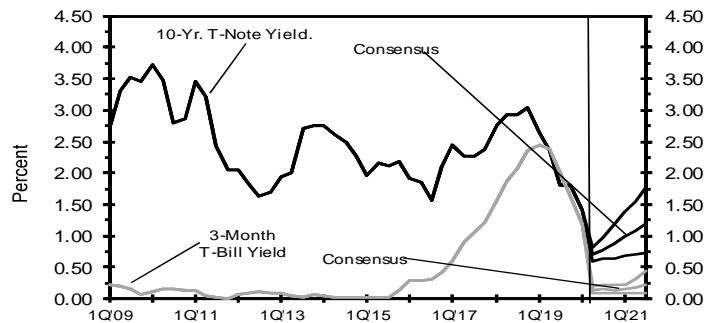
| Key Assumptions | History | | | | | | | | Consensus Forecasts-Quarterly | | | | | |
|----------------------|---------|-------|-------|-------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------|
| | 2Q | | 3Q | | 4Q | | 1Q | | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q |
| | 2018 | 2018 | 2018 | 2019 | 2019 | 2019 | 2019 | 2019 | 2020 | 2020 | 2020 | 2021 | 2021 | 2021 |
| Fed's AFE \$ Index | 105.5 | 107.8 | 109.4 | 109.4 | 110.3 | 110.5 | 110.3 | 111.2 | 113.2 | 113.6 | 113.6 | 113.4 | 112.9 | 112.4 |
| Real GDP | 3.5 | 2.9 | 1.1 | 3.1 | 2.0 | 2.1 | 2.1 | -5.0 | -34.0 | 15.2 | 8.2 | 6.2 | 4.7 | 3.7 |
| GDP Price Index | 3.2 | 2.0 | 1.6 | 1.1 | 2.4 | 1.8 | 1.3 | 1.4 | -0.4 | 1.0 | 1.3 | 1.5 | 1.7 | 1.7 |
| Consumer Price Index | 2.2 | 2.1 | 1.3 | 0.9 | 3.0 | 1.8 | 2.4 | 1.2 | -3.2 | 1.3 | 1.7 | 2.1 | 1.9 | 1.9 |

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).

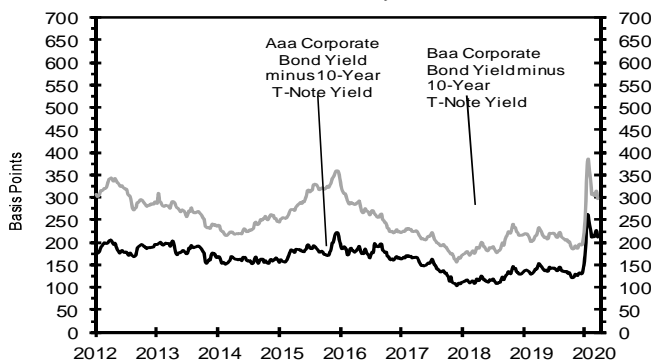
U.S. Treasury Yield Curve
Week ended May 22, 2020 & Year Ago vs.
2Q 2020 & 3Q 2021
Consensus Forecasts



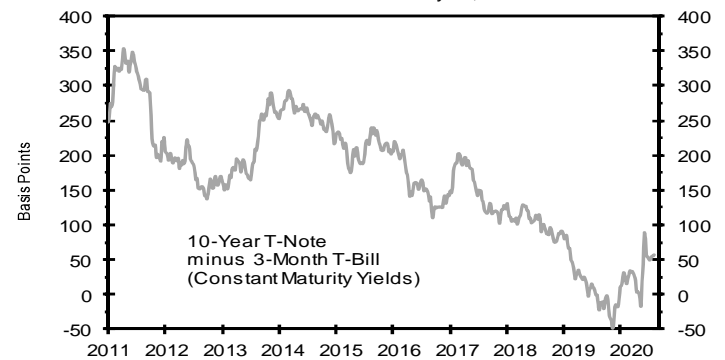
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
(Quarterly Average) Forecast



Corporate Bond Spreads
As of week ended May 22, 2020



U.S. Treasury Yield Curve
As of week ended May 22, 2020



Dividend Yields of Seven Company Proxy Group

| Company | Atmos Energy Corp | Chesapeake Utilities | Nisource Inc | Northwest Natural Gas Co | One Gas Inc. | South Jersey Industries Inc | Spire Inc. |
|-----------------|-------------------|----------------------|--------------|--------------------------|--------------|-----------------------------|--------------|
| <i>Symbol</i> | <i>ATO</i> | <i>CPK</i> | <i>NI</i> | <i>NWN</i> | <i>OGS</i> | <i>SJI</i> | <i>SR</i> |
| Div | 2.46 | 1.83 | 0.92 | 1.92 | 2.32 | 1.25 | 2.61 |
| 52-wk low | 77.92 | 69.47 | 19.56 | 50.50 | 63.67 | 19.62 | 57.37 |
| 52-wk high | 121.08 | 101.29 | 30.67 | 77.26 | 96.97 | 34.48 | 88.00 |
| Spot Price | 99.72 | 84.36 | 22.97 | 54.85 | 74.51 | 24.67 | 65.46 |
| Spot Div Yield | 2.47% | 2.17% | 4.01% | 3.50% | 3.11% | 5.07% | 3.99% |
| 52-wk Div Yield | 2.47% | 2.14% | 3.66% | 3.01% | 2.89% | 4.62% | 3.59% |
| Average | 2.47% | 2.16% | 3.83% | 3.25% | 3.00% | 4.84% | 3.79% |

| | <u>Average</u> |
|-----------------|---------------------|
| Spot Div Yield | <u>3.47%</u> |
| 52-wk Div Yield | <u>3.20%</u> |
| Average | <u>3.34%</u> |

Source: Barrons June 22, 2020
Value Line May 29, 2020

Five-Year Growth Estimate Forecast for Proxy Group (Actual)

| Company | Symbol | Source | | | | | Average |
|-----------------------------|--------|--------|--------|-------------|------------|---------------------|---------|
| | | Yahoo | Zacks | Morningstar | Value Line | Average | |
| Atmos Energy Corp | ATO | 7.15% | 7.20% | 7.50% | 7.00% | 7.21% | |
| Chesapeake Utilities | CPK | 4.74% | NMF | NMF | 9.00% | 6.87% | |
| Nisource Inc | NI | 4.89% | 5.80% | 3.30% | 13.50% | 6.87% | |
| Northwest Natural Gas Co | NWN | 3.10% | 3.10% | NMF | 26.50% | 10.90% | |
| One Gas Inc. | OGS | 5.00% | 5.50% | NMF | 6.50% | 5.67% | |
| South Jersey Industries Inc | SJI | 10.20% | 10.20% | NMF | 12.50% | 10.97% | |
| Spire Inc. | SR | 4.67% | 4.70% | NMF | 5.50% | 4.96% | |
| Average | | | | | | <u><u>7.64%</u></u> | |

Source:
 (From Internet)

June 22, 2020

Five-Year Growth Estimate Forecast for Proxy Group (Adjusted)

| Company | Symbol | Source | | | | | Average |
|-----------------------------|--------|--------|--------|-------------|------------|---------------------|---------|
| | | Yahoo | Zacks | Morningstar | Value Line | Average | |
| Atmos Energy Corp | ATO | 7.15% | 7.20% | 7.50% | 7.00% | 7.21% | |
| Chesapeake Utilities | CPK | 4.74% | NMF | NMF | 9.00% | 6.87% | |
| Nisource Inc | NI | 4.89% | 5.80% | 3.30% | 13.50% | 6.87% | |
| Northwest Natural Gas Co | NWN | 3.10% | 3.10% | NMF | X | 3.10% | |
| One Gas Inc. | OGS | 5.00% | 5.50% | NMF | 6.50% | 5.67% | |
| South Jersey Industries Inc | SJI | 10.20% | 10.20% | NMF | 12.50% | 10.97% | |
| Spire Inc. | SR | 4.67% | 4.70% | NMF | 5.50% | 4.96% | |
| Average | | | | | | <u><u>6.52%</u></u> | |

Expected Market Cost Rate of Equity
Using Data for the Proxy Group of Seven Natural Gas Companies
5-Year Forecasted Growth Rates

| <u>Time Period</u> | <u>Adjusted Dividend Yield</u> (1) | <u>Growth Rate</u> (2) | <u>Expected Return on Equity</u> (3=1+2) |
|---|---|-------------------------------|---|
| (1) 52-Week Average Ending: June 22, 2020 | 3.20% | 6.52% | 9.72% |
| (2) Spot Price Ending: June 22, 2020 | <u>3.47%</u> | <u>6.52%</u> | <u>9.99%</u> |
| (3) Average: | <u><u>3.34%</u></u> | <u><u>6.52%</u></u> | <u><u>9.86%</u></u> |

Sources: Value Line May 29, 2020
Barrons June 22, 2020

| <u>Company</u> | <u>Beta</u> |
|------------------------------|--------------------|
| Atmos Energy Corp | 0.80 |
| Chesapeake Utilities | 0.75 |
| Nisource Inc | 0.85 |
| Northwest Natural Gas Co | 0.80 |
| One Gas Inc. | 0.80 |
| South Jersey Industries Inc | 0.95 |
| Spire Inc. | 0.80 |
| Average beta for CAPM | <u>0.82</u> |

Source:
Value Line

May 29, 2020

| Risk-Free Rate <u>Treasury note 10-yr Note</u> | <u>Yield</u> |
|---|---------------------|
| 3Q 2020 | 0.80 |
| 4Q 2020 | 0.90 |
| 1Q 2021 | 1.00 |
| 2Q 2021 | 1.10 |
| 3Q 2021 | 1.20 |
| 2022-2026 | 2.30 |
| Average | <u>1.22</u> |

Source:
Blue Chip

June 1, 2020

Required Rate of Return on Market as a Whole Forecasted

| | <u>Dividend Yield</u> | + | <u>Growth Rate</u> | = | <u>Expected Market Return</u> |
|---------------------------------------|---------------------------|-----|------------------------|-----|---------------------------------------|
| Value Line Estimate | 2.20% | | 10.67% | (a) | 12.87% |
| S&P 500 | 2.03% | (b) | 5.80% | | 7.83% |
| Average Expected Market Return | | | | = | <u>10.35%</u> |

(a) $((1+50\%)^{.25} - 1)$ Value Line forecast for the 3 to 5 year index appreciation is 50%

(b) S&P 500 multiplied by half the growth rate

Sources:

| | |
|---|-----------|
| Value Line | 1/31/2020 |
| S&P 500 Dividend Yield (Barrons) | 2/4/2020 |
| S&P 500 Growth Rate (Yahoo! and Morningstar) | 2/4/2020 |

CAPM with Forecasted Return

Re Required return on individual equity security
Rf Risk-free rate
Rm Required return on the market as a whole
Be Beta on individual equity security

$$\mathbf{Re} = Rf + Be(Rm - Rf)$$

| | | |
|-----------|---|-------------|
| Rf | = | 1.2167 |
| Rm | = | 10.3477 |
| Be | = | 0.82 |
| Re | = | <u>8.72</u> |

Sources: Value Line May 29, 2020
Blue Chip June 1, 2020

I&E Statement No. 3
Witness: Ethan H. Cline

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Direct Testimony

of

Ethan H. Cline

Bureau of Investigation and Enforcement

Concerning:

Fully Projected Future Test Year Reporting Requirements

Flex Rate Customers

Weather Normalization Adjustment

Revenue Normalization Adjustment

Cost of Service Study

Scale Back of Rates

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1 **INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS**
3 **ADDRESS?**

4 A. My name is Ethan H. Cline. My business address is Pennsylvania Public Utility
5 Commission, 400 North Street, Harrisburg, PA 17120.

6
7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission in the Bureau of
9 Investigation and Enforcement (“I&E”) as a Fixed Utility Valuation Engineer.

10
11 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**
12 **BACKGROUND?**

13 A. My education and professional background are set forth in Appendix A, which is
14 attached.

15
16 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

17 A. I&E is responsible for protecting the public interest in proceedings before the
18 Commission. The I&E analysis in the proceeding is based on its responsibility to
19 represent the public interest. This responsibility requires the balancing of the
20 interests of ratepayers, the regulated utility, and the regulated community as a
21 whole.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. My direct testimony relates to Columbia Gas of Pennsylvania, Inc.’s (“Columbia
3 Gas” or “Company”) requested base rate revenue increase of \$100,437,420¹. My
4 testimony specifically addresses the following issues:

- 5 • Flex Rate Customers;
- 6 • Weather Normalization Adjustment;
- 7 • Revenue Normalization Adjustment;
- 8 • Revenue allocation;
- 9 • Rate Structure;
- 10 • Customer charge;
- 11 • Cost of Service allocation;
- 12 • Scale back of rates.

13

14 **Q. WHAT TEST YEAR DID THE COMPANY ELECT TO USE IN THIS**
15 **PROCEEDING?**

16 A. Columbia elected to base its rates on a fully projected future test year (“FPFTY”)
17 ending December 31, 2021. The Company also addressed a historic test year
18 (“HTY”) ended November 30, 2019 and future test year (“FTY”) ending
19 November 30, 2020 (Columbia St. No. 2, p. 2).

¹ Columbia Gas Statement No. 4, p. 4.

1 **FPFTY REPORTING REQUIREMENTS**

2 **Q. WHAT AMOUNT OF ADDITIONAL RATE BASE WILL BE**
3 **ASSOCIATED WITH THE INCLUSION OF THE FPFTY ENDING**
4 **DECEMBER 31, 2021 FOR COLUMBIA?**

5 A. The Company’s claimed rate base for the FPFTY ending December 31, 2021 is
6 \$2,401,427,019 (Columbia Ex. No. 108, p. 3, col. 5, line 26). Columbia’s rate
7 base for the FTY ending November 30, 2020 is \$2,056,012,257 (Columbia Ex.
8 No. 108, p. 3, col. 3, line 26). Therefore, \$345,414,762 (\$2,401,427,019 –
9 \$2,056,012,257) of rate base additions are associated with the thirteen months
10 between the end of FTY and the end of the FPFTY.

11
12 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING PLANT**
13 **ADDITIONS THAT COLUMBIA PROJECTS TO BE IN SERVICE**
14 **DURING THE FTY ENDING NOVEMBER 30, 2020 AND THE FPFTY**
15 **ENDING DECEMBER 31, 2021?**

16 A. Yes. I recommend that the Company provide the Commission’s Bureaus of
17 Technical Utility Services and Investigation and Enforcement with an update to
18 Columbia Exhibit No. 108, Schedule 1 no later than April 1, 2021, under this
19 docket number, which should include actual capital expenditures, plant additions,
20 and retirements by month for the twelve months ending November 30, 2020. An
21 additional update should be provided for actuals through December 31, 2021, no
22 later than April 1, 2022.

1 **Q. WHY DO YOU RECOMMEND THAT COLUMBIA PROVIDE THESE**
2 **UPDATES?**

3 A. I&E continues to believe that there is value in determining how closely
4 Columbia's projected investments in future facility comport with the actual
5 investments that are made by the end of the FTY and FPFTY. Determining the
6 correlation between Columbia's projected and actual results will help inform the
7 Commission and the parties in Columbia's future rate cases as to the validity of
8 Columbia's projections.

9 Using a FPFTY, Columbia is requesting ratepayers to pre-pay a return on
10 its projected investment in future facilities that are not in place and providing
11 service at the time the new rates take effect, but also are not subject to any
12 guarantee of being completed and placed into service. While the FPFTY provides
13 for such projections, there should be verification of the projections. Therefore,
14 requiring the Company to provide updates demonstrating that actual investments
15 comport with projections used in setting rates using the FPFTY provides the
16 Commission with actual data to gauge the accuracy of Columbia's projected
17 investments in future proceedings.

18 Further more, it is important for Columbia to provide these reports due to
19 the timing of its FPFTY. Specifically, as discussed above, the rate base additions
20 for the FPFTY occur over a thirteen month period rather than 12 months. As such,
21 an annual report may not include the full thirteen months of actual rate base
22 addition information.

1 **FLEX-RATE CUSTOMERS**

2 **Q. DOES THE COMPANY’S TARIFF ALLOW IT TO NEGOTIATE RATES**
3 **FOR CUSTOMERS WITH AN ALTERNATIVE COMPETITIVE SUPPLY?**

4 A. Yes. The Company’s tariff currently allows it to grant discount or “flex-rates” to
5 certain customers who can show that they have a competitive alternative to the
6 Company’s gas supply. The flex-rate provisions are described in Supplement No.
7 221 to Columbia Tariff Gas - PA P.U.C. No. 9, p. 68.

8
9 **Q. DOES THE COMPANY CURRENTLY HAVE ANY CUSTOMERS**
10 **RECEIVING FLEX-RATES?**

11 A. Yes. The Company’s present and proposed proof of revenue schedules show
12 revenue from flex-rate customers for several rate schedules (Columbia Exhibits No.
13 3 and 103).

14
15 **Q. WHAT DID THE COMPANY AGREE TO REGARDING CERTAIN FLEX**
16 **RATE CUSTOMERS IN ITS LAST BASE RATE CASE AT DOCKET NO. R-**
17 **2018-2647577?**

18 A. In its rebuttal testimony in that case, Columbia Gas stated that it was amenable to
19 providing a competitive alternative analysis for certain customers under a
20 confidentiality agreement (Docket No. R-2018-2647577 Columbia Gas St. No.3-R,
21 p. 4). The Company provided, and I evaluated, an update to the requested
22 competitive alternatives as was agreed to as part of the discovery process in this case.

1 **Q. WHAT DO YOU RECOMMEND REGARDING THE COMPANY’S FLEX**
2 **RATE CUSTOMERS?**

3 A. I recommend that the Company provide an update to the competitive alternative
4 analysis for any customer that has not had their alternative fuel source verified for a
5 period of 10 years or more at the point at which Columbia Gas files its base rate case.
6 This recommendation will ensure that each customer that receives service under flex
7 rates is doing so for appropriate reasons.

8
9 **Q. WHY IS IT IMPORTANT TO PERIODICALLY ANALYZE COMPETITIVE**
10 **ALTERNATIVES?**

11 A. It is important to periodically analyze competitive alternatives to ensure that the rates
12 of flex rate customers are not discounted lower than is necessary to avoid the
13 customer choosing the alternative supply. Providing excessive discounts to
14 customers would be harmful to both the Company and its customers since the other
15 customers make up the lost revenue that results when flex-rate customers pay less
16 than tariff rates.

17
18 **Q. WHAT ARE SOME POTENTIAL CHANGES IN THE COMPANY’S**
19 **ABILITY AND COST TO SUPPLY SERVICE?**

20 A. Some potential changes are situations in which the Company can no longer supply
21 the customer utilizing the current source of gas, utilize the existing capacity, or the
22 cost to supply customers has increased or will increase. As an example, a situation

1 could arise where a larger pipeline project is needed to serve both the flex-rate and
2 tariff customers. In that case, termination of the flex-rate contract could result in the
3 scale-back or cancellation of the larger pipeline project, and avoidance of capital and
4 operating expense, which would result in savings for the Company and its customers.

5
6 **Q. WHAT ARE SOME CHANGES IN THE CUSTOMER’S ALTERNATIVE**
7 **SUPPLY THAT COULD AFFECT FLEX-RATE CUSTOMERS?**

8 A. Some of the possible changes in the customer’s alternative supply that could affect
9 flex-rate customers are situations where the customers may no longer have a viable
10 alternative supply, or the customer no longer has a viable alternative source of gas or
11 gas capacity, or the cost of the alternate supply to customers has increased or will
12 increase. The natural gas industry is continuously changing. For example, a
13 customer may have had access to an interstate pipeline that is now no longer
14 available. Also, the cost and difficulty a customer would face to construct
15 interconnections to pipelines may have increased over the time since the last
16 competitive alternative was verified due to inflation, public concerns, restoration
17 costs, and environmental impacts.

18
19 **WEATHER NORMALIZATION ADJUSTMENT**

20 **Q. WHAT IS THE WEATHER NORMALIZATION ADJUSTMENT?**

21 A. The Weather Normalization Adjustment (“WNA”) is a pilot program established
22 by the Company after Commission approval in the 2012 Columbia base rate case

1 and made a permanent Rider after the 2018 Columbia base rate case. The purpose
2 of the WNA is to adjust the temperature sensitive portion of a customer's bill in
3 order to mitigate the impacts of warmer or colder than normal weather (Columbia
4 St. No. 3, p. 16). In other words, customers are billed less than what a traditional
5 bill calculation would require during colder than normal heating seasons and billed
6 more during warmer than normal heating seasons (Columbia St. No. 3, pp. 17-18).

7
8 **Q. IS THE COMPANY PROPOSING ANY CHANGES TO THE WNA?**

9 A. Yes. The Company is proposing to remove the 3% deadband (Columbia St. No. 3,
10 p. 19).

11
12 **Q. WHAT IS THE 3% DEADBAND?**

13 A. The 3% deadband is a provision that the Company agreed to as a part of the 2018
14 base rate case settlement at Docket No. R-2018-2647577. As stated in Columbia
15 Tariff Supplement 282 to Tariff Gas – Pa. P.U.C. No. 9 Tenth Revised Page No.
16 162, paragraph (h) “A 5% deadband shall be effective through the January 2019
17 cycle billing. The WNA for a billing cycle will apply only if the AHDD or the
18 billing cycle are lower than 95% or higher than 105% of the NHDD for the billing
19 cycle. A billing adjustment will only occur if the variation of AHDD is lower than
20 95% or higher than 105% of the NHDD for an individual billing cycle. Beginning
21 with the February 2019 cycle billing, the deadband will be 3%. At that time, the
22 WNA for a billing cycle will apply only if the AHDD for the billing cycle are

1 lower than 97% or higher than 103% of the NHDD for an individual billing
2 cycle.” In this definition, AHDD stands for the Actual Heating Degree Days and
3 the NHDD stands for the Normal Heating Degree Days. The example provided by
4 the Company is that, if a billing cycle is 2% warmer or colder than normal, then no
5 adjustment would be made (Columbia St. No. 3, p. 19).

6
7 **Q. WHAT DO YOU RECOMMEND REGARDING THE COMPANY’S WNA**
8 **PROPOSALS?**

9 A. I recommend that the proposal to remove the 3% deadband be denied.

10
11 **Q. WHY DO YOU RECOMMEND THAT THE 3% DEADBAND BE**
12 **RETAINED?**

13 A. A WNA is a departure from traditional ratemaking in that it allows the Company
14 to actually adjust a customer’s base rate bill, which was calculated based on
15 Commission approved rates, outside the scope of a base rate case. I believe such a
16 departure from traditional ratemaking should only occur due to circumstances that
17 are an extraordinary departure from normal operating conditions, such as
18 abnormal weather. There is no need to reconcile the day-to-day temperature
19 variations that can be considered a normal part of doing business. Therefore, a 3%
20 deadband is a reasonable provision, because it allows for a range of what is
21 considered “normal” weather in which the Company’s Commission-approved
22 rates would be applied without adjustment.

1 I believe that the WNA with the 3% deadband is a reasonable provision
2 because it serves to protect both the Company and customers from the effects of
3 abnormal weather, which cannot be predicted or controlled. However, as I stated
4 above, there is no need to reconcile day-to-day weather changes, and I, therefore,
5 recommend the 3% deadband that is currently in place also become permanent.
6

7 **REVENUE NORMALIZATION ADJUSTMENT**

8 **Q. WHAT IS A REVENUE NORMALIZATION ADJUSTMENT?**

9 A. A revenue normalization adjustment (“RNA”) is a tariff provision that is
10 “designed to ‘break the link’ between residential non-gas revenue received by the
11 Company and gas consumed by non-CAP residential customers.” (Columbia St.
12 No. 3, p. 20). In other words, the Company is proposing to stabilize its revenue
13 level received from customers by enacting a “benchmark distribution revenue
14 level” and adjusting revenues to that point regardless of actual usage levels.
15

16 **Q. IS THE COMPANY PROPOSING AN RNA IN THIS PROCEEDING?**

17 A. Yes. The Company is proposing to apply an RNA to its non-CAP residential
18 customers (Columbia St. No. 3, p. 20).
19

20 **Q. HOW DOES THE COMPANY PROPOSE TO ENACT THE RNA?**

21 A. The Company proposes to set the benchmark distribution revenue levels by month
22 for the peak period, October through March, and off-peak period, April through

1 September, separately, based on the revenue requirement approved in the present
2 proceeding (Columbia St. No. 3, pp. 20-22).

3
4 **Q. DO YOU AGREE WITH THE COMPANY'S RECOMMENDATION?**

5 A. No. Through Act 11 and the FPFTY, the Company is permitted to build into its
6 revenue requirement an adjustment for revenue lost due to a decline in usage that
7 is projected to occur after rates go into effect.

8
9 **Q. HAS THE COMPANY DEMONSTRATED A NEED FOR SUCH REVENUE
10 STABILIZATION?**

11 A. No. The purpose of revenue stabilization is to remove the inherent risk of not
12 recovering the full amount of revenue requirement allowed by the Commission
13 due to changes in usage. Between the frequent base rate cases filed by the
14 Company, staying out no more than two years, the FPFTY, the DSIC, and the
15 WNA, the Company has demonstrated no need for further revenue stabilization
16 measures. Additionally, the Company has not indicated that the RNA will result
17 in fewer base rate increases, thus removing any benefit from the residential
18 customers.

19
20 **Q. CAN THE PROPOSED RNA CAUSE HARM?**

21 A. Yes. In order for customers to benefit from the RNA, they would need to use
22 more gas to trigger the refund, contrary to conservation efforts. Customers who

1 undertake conservation efforts will see their savings eroded and their investment
2 payback time increase as the Company is permitted to increase rates in response to
3 usage declines.

4 Further, customers who lack the financial means to undertake conservation
5 efforts will be penalized by the RNA, which increases rates to address usage
6 reductions. While the adjustment applies only to non-CAP residential customers,
7 there are potentially many customers whose ability to pay may be compromised as
8 their rates increase to address conservation efforts undertaken by more affluent
9 customers. Therefore, for this reason and the reasons discussed above, I
10 recommend the Company's proposed RNA be denied.

11 **COST OF SERVICE**

12 **Q. WHAT IS AN ALLOCATED COST OF SERVICE ("ACOS") STUDY?**

13 A. A utility provides service to a defined set of customer classes that are different in
14 terms of demand and usage patterns. An ACOS allocates or assigns a utility's
15 revenue requirement based on those service differences. In other words, an ACOS
16 is a formalized analysis of costs that attempts to assign to each customer or rate
17 class its proportionate share of the Company's total cost of service (i.e., the
18 Company's total revenue requirement). The results of such a study can be utilized
19 to determine the relative cost of service for each class and help determine the
20 individual class revenue requirements and, to the extent a particular class is above
21 or below the system average rate of return, show the additional revenues each
22

1 class receives or conversely the additional revenues that each class contributes to
2 the Company's overall revenues. In addition to the relative provision of revenues,
3 a relative rate of return is also provided, which shows how the rate of return for
4 each class compares to the system average rate of return.

5
6 **Q. WHAT ARE RATE OF RETURN AND RELATIVE RATE OF RETURN?**

7 A. The rate of return is the Commission authorized return on rate base that is
8 determined in a base rate proceeding. A relative rate of return indicates how the
9 rate of return of each customer class compares to the system average rate of return.
10 In general, a relative rate of return that provides revenue equal to its cost to serve
11 would have a relative rate of return equal to 1.0.

12
13 **Q. DID THE COMPANY PROVIDE AN ACOS STUDY IN THIS**
14 **PROCEEDING?**

15 A. Yes. The Company performed and provided three ACOS studies in its filing
16 sponsored by Columbia witness Chad Notestone as he described on page 3 of
17 Columbia Statement No. 11. The first is a customer-demand ACOS study
18 (Columbia Exhibit No. 111, Schedule 1), the second is a peak and average ACOS
19 study (Columbia Exhibit No. 111, Schedule 2); and the third ACOS study is an
20 average of the customer-demand studies and the peak and average studies
21 (Columbia Exhibit No. 111, Schedule 3).

1 **Q. WHAT IS THE LARGEST CAPITAL COST FOR COLUMBIA?**

2 A. On page 14 of Columbia Statement No. 11, Mr. Notestone stated that “[m]ains and
3 services account for approximately 87% of the Company’s gross plant investment
4 and approximately 56% of distribution O&M expenses.”

5
6 **Q. WHAT IS THE MAIN DIFFERENCE BETWEEN THE CUSTOMER-
7 DEMAND AND THE PEAK AND AVERAGE ACOS STUDIES?**

8 A. The difference between the customer-demand ACOS and the peak and average
9 ACOS studies presented by Mr. Notestone in Company Exhibit No. 111 is in the
10 way that each study allocates the costs of mains. Consequently, the two ACOS
11 studies yield different relative rates of return for each rate class. As described on
12 page 3 of Columbia Statement No. 11, the customer-demand study is generally
13 more favorable to the industrial class and the peak and average study is generally
14 more favorable to the residential class.

15 The customer-demand methodology classifies distribution mains as
16 partially customer related and partially demand related. The customer portion of
17 mains is then allocated to the various customer classes based on the total number
18 of customers, while the demand portion of mains is allocated to classes based on
19 peak day contributions or demand. This methodology has been rejected by the
20 Commission in other natural gas base rate cases.

21 The peak and average ACOS, however, allocates distribution mains to
22 classes based partially on contributions to peak day demand and partially on

1 annual consumption (average demand). This methodology has been accepted by
2 the Commission in previous cases.

3
4 **Q. WHAT IS THE IMPACT ON THE RELATIVE RATE OF RETURN**
5 **UNDER THE CUSTOMER-DEMAND METHODOLOGY AND THE PEAK**
6 **AND AVERAGE METHODOLOGY?**

7 A. With the customer-demand cost of service study (“COSS”), the relative rate of
8 return under present rates for the RSS/RDS customer classes is 0.73 (Columbia
9 Exhibit No. 111, Schedule 1, page 2, line 14, column D). Under this scenario, the
10 Company does not recoup the full costs it incurs to provide service for the
11 RSS/RDS customer classes. Conversely, under the peak and average
12 methodology, the relative rate of return under present rates for the same customer
13 classes (RSS/RDS) is 1.25 (Columbia Exhibit No. 111, Schedule 2, page 2, line
14 14, column D). With the peak and average COSS, the RSS/RDS customer classes
15 pay more than the Company incurs to provide service for them under present rates.

16 This difference can be explained by the fact that the customer-demand
17 study places more cost obligation on the customer component of the distribution
18 system, which must be designed to reach all customers. This design aspect of the
19 customer-demand study implies a greater impact on the largest class of customers
20 in terms of number of customers. The demand component of the distribution
21 system is the sizing of the system to meet peak demand, which would have a
22 greater impact on largest class of customers in terms of volume.

1 **Q. WHICH OF THE THREE ACOS STUDIES SPONSORED BY MR.**
2 **NOTESTONE DID THE COMPANY UTILIZE TO ALLOCATE THE**
3 **PROPOSED REVENUE INCREASES?**

4 A. The Company utilized the third ACOS study sponsored by Mr. Notestone, which
5 is the average of the customer-demand study and the peak and average study,
6 presented on Columbia Exhibit No. 111, Schedule No. 3 to allocate the proposed
7 revenue increases (Columbia St. No. 11, p. 3).

8
9 **Q. WHICH ACOS STUDY DO YOU RECOMMEND THE COMMISSION**
10 **USE TO ALLOCATE THE REVENUE INCREASES AMONG THE**
11 **DIFFERENT CUSTOMER CLASSES IN THIS PROCEEDING?**

12 A. I recommend the Commission use the peak and average ACOS study provided by
13 the Company on Columbia Exhibit No. 111, Schedule 2 to allocate the final
14 revenue increases among the different customer classes.

15
16 **Q. HAS THE COMMISSION PREVIOUSLY APPROVED THE USE OF THE**
17 **PEAK AND AVERAGE ACOS STUDY IN A RATE PROCEEDING?**

18 A. Yes. The Commission has previously recognized that distribution mains are built
19 on the basis of year-round demands as well as peak demands. In the National Fuel
20 Gas Distribution Company (“NFGD”) 1994 base rate proceeding, the Commission

1 accepted the Peak & Average methodology, stating:

2 “[t]he Peak and Average method that allocates mains equally
3 is a sound and reasonable method of cost allocation and should
4 remain intact.” (*Pa. P.U.C. v. National Fuel Gas Distribution*
5 *Co.*, 83 Pa. PUC 262 (1994)).
6

7 **Q. HAS THE COMMISSION PREVIOUSLY REJECTED INCLUDING THE**
8 **COST OF DISTRIBUTION MAINS AS A CUSTOMER COST?**

9 A. Yes. The Commission has previously rejected including the cost of distribution
10 mains as a customer cost in the Philadelphia Gas Works 2007 base rate proceeding
11 at Docket No. R-00061931. Specifically, the Commission stated at Docket No. R-
12 00061931, Order entered September 28, 2007 that “PGW’s proposal to allocate a
13 percentage of the cost of the distribution mains as a customer cost not to be
14 acceptable” and that “[r]eviewing the record, we find that the allocation of
15 distribution mains investment costs should be done using both annual and peak
16 demands.”
17

18 **Q. ARE YOU AWARE OF ANY CASES IN WHICH THE COMMISSION HAS**
19 **ACCEPTED THE USE OF THE CUSTOMER-DEMAND**
20 **METHODOLOGY FOR DEVELOPING AN ACOS STUDY?**

21 A. No. I am not aware of any case in which the Commission has accepted the use of
22 the customer-demand methodology for developing a cost of service study.

1 **Q. HOW DID THE COMPANY CLASSIFY AND ALLOCATE MAINS AND**
2 **MAINS-RELATED ACCOUNTS IN THE PEAK AND AVERAGE COSS?**

3 A. In the peak and average study, Columbia allocated low pressure mains and
4 regulated non-low pressure mains similarly. The Company equally weighted
5 average throughput volumes based on the historic test year ended November 30,
6 2019 and design day volumes (Columbia St. No. 11, pp. 11-12).

7
8 **Q. DO YOU AGREE WITH THIS MANNER OF CLASSIFYING AND**
9 **ALLOCATING THE FIXED COST OF MAINS AND MAINS-RELATED**
10 **ACCOUNTS?**

11 A. Yes. The Commission previously determined in a 1994 Opinion and Order in the
12 Pennsylvania American Water Company case at Docket No. R-00932670, Order
13 entered July 26, 1994, at pages 111- 115, that direct customer costs include “the
14 depreciation, return and income taxes associated with meter and service
15 investment; the O&M costs for meters and services; and the expense associated
16 with meter reading and billing.” Mains are not included in any of these categories,
17 and therefore should not be considered or classified as a customer cost. The basis
18 for this determination is that the quantity and investment in mains does not change
19 significantly if one customer joins or leaves the system. Mains are built to deliver
20 gas, and the cost of mains cannot be assigned to one specific customer. Therefore,
21 no portion of the fixed costs or depreciation expense associated with mains should
22 be allocated to the customer cost function.

1 The Commission also reaffirmed that the cost of mains should be allocated
2 on a combination of throughput and demand, and therefore not allocated to the
3 customer function. In that case, Administrative Law Judge Jones noted that “the
4 Commission has rejected minimum and zero-intercept system methods as
5 inconsistent with causation.” (PPL Gas Utilities, Docket No. R-00061398, Order
6 entered February 8, 2007).

8 **CUSTOMER COST ANALYSIS**

9 **Q. WHAT IS A CUSTOMER COST ANALYSIS AND HOW IS IT USED?**

10 A. A customer cost analysis is a part of a COSS that is used to determine the
11 appropriate fixed customer charges for the various classes and meter sizes. It
12 includes customer costs only.

14 **Q. WHY IS IT NECESSARY TO PERFORM A CUSTOMER COST 15 ANALYSIS?**

16 A. A fixed customer charge represents the revenue that the Company is guaranteed to
17 receive each month, regardless of the level of usage. As acknowledged in the
18 seventh edition of the American Water Works Association M1 Manual, there is a
19 tradeoff between revenue stability from a high customer charge, and affordability
20 and conservation from a low customer charge and higher usage rates.²

² AWWA Manual of Water Supply Practices M1 Principles of Water Rates, Fees, Charges, Seventh Edition. pp. 154-155.

1 **Q. WHAT IS A DIRECT CUSTOMER COST?**

2 A. A direct customer cost is a cost that changes with the increase or decrease of a
3 single customer.

4

5 **Q. WHAT IS AN INDIRECT CUSTOMER COST?**

6 A. An indirect customer cost is a customer related cost that does not change with the
7 increase or decrease of a single customer. The Commission has allowed, in past
8 instances, certain indirect customer costs to be included in a customer cost
9 analysis and thus recovered in a customer charge. As an example, in previous
10 cases, the Commission has allowed the indirect cost of Employee Pension and
11 Benefits.

12

13 **Q. DID COLUMBIA PREPARE A CUSTOMER COST ANALYSIS TO**
14 **SUPPORT THE PROPOSED CUSTOMER CHARGE INCREASES IN**
15 **THIS PROCEEDING?**

16 A. Yes. The Company prepared two customer cost analyses presented in Columbia
17 Exhibit No. 111, Schedule 1, pages 14-30. The first of the Company's customer
18 cost analyses allocates a portion of the cost of mains to customers and is presented
19 on pages 14-22. The second of the Company's customer cost analyses does not
20 allocate any portion of the cost of mains to customers and is presented in
21 Columbia Exhibit No. 111, Schedule 1, pages 23-30. The results of each customer

1 cost analysis are presented in the following table:

2

| Customer Class | Including Mains (Columbia Ex. No. 111, Sch. 1, p. 16, line 41) | Excluding Mains (Columbia Ex. No. 111, Sch. 1, p. 25, line 37) |
|----------------|--|--|
| RSS/RDS | \$54.16 | \$23.05 |
| SGS/DS-1 | \$60.16 | \$25.87 |
| SGS/DS-2 | \$108.42 | \$43.99 |
| SDS/LGSS | \$459.97 | \$191.02 |
| LDS/LGSS | \$2,161.40 | \$919.89 |
| MLDS | \$1,170.32 | \$1,032.73 |
| FLEX | \$4,868.08 | \$1,548.69 |

3

4 **Q. HOW DID COLUMBIA DETERMINE THE FIXED MONTHLY COSTS**
5 **BY CUSTOMER CLASS ABOVE?**

6 A. According to Columbia witness Melissa J. Bell, the Company designed its rates to
7 strike a balance between fairness and gradualism (Columbia St. No. 3, p. 35).

8

9 **Q. DO YOU BELIEVE THAT THE COMPANY'S CUSTOMER COST**
10 **ANALYSIS THAT INCLUDES THE COST OF MAINS SHOULD BE**
11 **CONSIDERED?**

12 A. No. As I discussed above, the Commission has established in previous cases that
13 mains are not properly included in a customer cost analysis. The Commission
14 stated in the PGW base rate case at Docket No. R-00061931, Order entered

1 September 28, 2007 that it found “PGW’s proposal to allocate a percentage of the
2 cost of the distribution mains as a customer cost not to be acceptable.”

3 Additionally, I am unaware of any cases in which the Commission has allowed the
4 cost of mains to be included in a customer cost analysis. Therefore, I recommend
5 the Company’s customer cost analysis that includes the cost of mains should not
6 be considered.

7
8 **CUSTOMER CHARGE**

9 **Q. WHAT CUSTOMER CHARGES IS THE COMPANY PROPOSING FOR**
10 **EACH RATE CLASS?**

11 A. The customer charges for each rate class that received a proposed increase is
12 shown in the table below. (Columbia No. 103, Sch. No. 8, pp. 5-9).

1

| Rate Schedule (Therms, annually) | Present Rate | Change | Proposed Rate | Percent Increase |
|-------------------------------------|--------------|------------|---------------|------------------|
| RS, RDS, RCC | | | | |
| All Usage | \$16.75 | \$6.25 | \$23.00 | 37.31% |
| SGSS1, SCD1, SGDS1 | | | | |
| <u>≤6,440</u> | \$22.75 | \$7.25 | \$30.00 | 34.51% |
| SGSS2, SCD2, SGDS2 | | | | |
| >6,440 to ≤64,440 | \$48.00 | \$12.00 | \$60.00 | 25.00% |
| SDS/LGSS | | | | |
| >64,400 to ≤110,000 | \$229.75 | \$60.25 | \$290.00 | 26.22% |
| >110,000 to ≤540,000 | \$757.34 | \$182.60 | \$940.00 | 24.11% |
| LDS | | | | |
| >540,000 to ≤1,074,000 | \$1,947.06 | \$472.94 | \$2,420.00 | 24.29% |
| >1,074,000 to ≤3,400,000 | \$3,028.76 | \$731.24 | \$3,760.00 | 24.14% |
| >3,400,000 to ≤7,500,000 | \$5,841.18 | \$1,408.82 | \$7,250.00 | 24.12% |
| >7,500,000 | \$8,653.60 | \$2,076.40 | \$10,730.00 | 23.99% |

2

3 **Q. ARE YOU RECOMMENDING ADJUSTMENTS TO ANY OF THE**
4 **COMPANY’S PROPOSED CUSTOMER CHARGES?**

5 A. Yes. Based on the customer cost analysis that does not include the cost of mains,
6 as described above, the customer charges for the SGS1, SGS2, and SDS/LGSS
7 classes are too high. I am not recommending an adjustment to the proposed
8 customer charges for the LDS customers because higher usage customers
9 generally favor a higher fixed charge and lower usage charges. I am also not

1 recommending an adjustment to the residential customer charge because it is
 2 consistent with the customer cost analysis.

3
 4 **Q. WHAT CUSTOMER CHARGES ARE YOU RECOMMENDING FOR THE**
 5 **SGS1, SGS2, AND SDS/LGSS CLASSES?**

6 A. I am recommending the customer charges for the SGS1, SGS2, and SDS/LGSS
 7 classes be adjusted to be consistent with the customer cost analysis as follows:

8

| Rate Schedule (Therms, annually) | Customer Cost Analysis | Company Proposed Rate | Change | I&E Proposed Rate |
|-------------------------------------|------------------------------|-----------------------------|----------|----------------------|
| RS, RDS, RCC | | | | |
| All Usage | \$23.05 | \$23.00 | \$0.00 | \$23.00 |
| SGSS1, SCD1, SGDS1 | | | | |
| <u>≤6,440</u> | \$25.87 | \$30.00 | \$26.00 | (\$14.00) |
| SGSS2, SCD2, SGDS2 | | | | |
| >6,440 to ≤64,440 | \$43.99 | \$60.00 | \$45.00 | (\$15.00) |
| SDS/LGSS | | | | |
| >64,400 to ≤110,000 | \$191.02 | \$290.00 | \$191.02 | (\$98.98) |
| >110,000 to <u>≤540,000</u> | \$919.89 | \$940.00 | \$920.00 | (\$20.00) |

9
 10 **SCALE BACK OF RATES**

11 **Q. WHAT SCALE BACK METHODOLOGY DO YOU RECOMMEND IF**
 12 **THE COMMISSION GRANTS LESS THAN THE FULL INCREASE?**

13 A. If the Commission grants less than the Company’s requested increase, I
 14 recommend that all customer charges and usage rates that have been proposed an

1 increase are scaled back proportionately based on the ACOSS that is ultimately
2 approved by the Commission.

3

4 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 A. Yes.

ETHAN H. CLINE

PROFESSIONAL EXPERIENCE AND EDUCATION

EXPERIENCE:

03/2009 - Present

Bureau of Investigation and Enforcement, Pennsylvania Public Utility Commission - Harrisburg, Pennsylvania

Fixed Utility Valuation Engineer – Assists in the performance of studies and analyses of the engineering-related areas including valuation, depreciation, cost of service, quality and reliability of service as they apply to fixed utilities. Assists in reviewing, comparing and performing analyses in specific areas of valuation engineering and rate structure including valuation concepts, original cost, rate base, fixed capital costs, inventory processing, excess capacity, cost of service, and rate design.

06/2008 – 09/2008

Akens Engineering, Inc. - Shiremanstown, Pennsylvania

Civil Engineer – Responsible, primarily, for assisting engineers and surveyors in the planning and design of residential development projects

10/2007 – 05/2008

J. Michael Brill and Associates - Mechanicsburg, Pennsylvania

Design Technician – Responsible, primarily, for assisting engineers in the permit application process for commercial development projects.

01/2006 – 10/2007

CABE Associates, Inc. - Dover, Delaware

Civil Engineer – Responsible, primarily, for assisting engineers in performing technical reviews of the sewer and sanitary sewer systems of Sussex County, Delaware residential development projects.

EDUCATION:

Pennsylvania State University, State College, Pennsylvania
Bachelor of Science; Major in Civil Engineering, 2005

- Attended NARUC Rate School, Clearwater, FL

TESTIMONY SUBMITTED:

I have testified and/or submitted testimony in the following proceedings:

1. Clean Treatment Sewage Company, Docket No. R-2009-2121928
2. Pennsylvania Utility Company – Water Division, Docket No. R-2009-2103937
3. Pennsylvania Utility Company – Sewer Division, Docket No. R-2009-2103980
4. UGI Central Penn Gas, Inc., 1307(f) proceeding, Docket No. R-2010-2172922
5. PAWC Clarion Wastewater Operations, Docket No. R-2010-2166208
6. PAWC Claysville Wastewater Operations, Docket No. R-2010-2166210
7. Citizens’ Electric Company of Lewisburg, Pa, Docket No. R-2010-2172665
8. City of Lancaster – Bureau of Water, Docket No. R-2010-2179103
9. Peoples Natural Gas Company LLC, Docket No. R-2010-2201702
10. UGI Central Penn Gas, Inc., Docket No. R-2010-2214415
11. Pennsylvania-American Water Company, Docket No. R-2011-2232243
12. Pentex Pipeline Company, Docket No. A-2011-2230314
13. Peregrine Keystone Gas Pipeline, LLC, Docket No. A-2010-2200201
14. Philadelphia Gas Works 1307(f), Docket No. R-2012-2286447
15. Peoples Natural Gas Company LLC, Docket No. R-2012-2285985
16. Equitable Gas Company, Docket Nos. R-2012-2312577, G-2012-2312597
17. City of Lancaster – Sewer Fund, Docket No. R-2012-2310366
18. Peoples TWP, LLC 1307(f), Docket No. R-2013-2341604
19. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2013-2361763
20. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2013-2361764
21. Joint Application, Docket Nos. A-2013-2353647, A-2013-2353649, A-2013-2353651
22. City of Dubois – Bureau of Water, Docket No. R-2013-2350509
23. The Columbia Water Company, Docket No. R-2013-2360798
24. Pennsylvania American Water Company, Docket No. R-2013-2355276
25. Generic Investigation Regarding Gas-on-Gas Competition, Docket Nos. P-2011-227868, I-2012-2320323
26. Philadelphia Gas Works 1307(f), Docket No. R-2014-2404355
27. Pike County Light and Power Company (Gas), Docket No. R-2013-2397353
28. Pike County Light and Power Company (Electric), Docket No. R-2013-2397237
29. Peoples Natural Gas Company LLC 1307(f), Docket No. R-2014-2403939
30. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2014-2420273
31. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2014-2420276
32. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2014-2420279
33. Emporium Water Company, Docket No. R-2014-2402324
34. Borough of Hanover – Hanover Municipal Water, Docket No. R-2014-2428304
35. Philadelphia Gas Works 1307(f), Docket No. R-2015-2465656

36. Peoples Natural Gas Company LLC 1307(f), Docket No. R-2015-2465172
37. Peoples Natural Gas Company – Equitable Division 1307(f), Docket No. R-2015-2465181
38. PPL Electric Utilities Corporation, Docket No. R-2015-2469275
39. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2015-2480934
40. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2015-2480937
41. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2015-2480950
42. UGI Utilities, Inc. – Gas Division, Docket No. R-2015-2518438
43. Joint Application of Pennsylvania American Water, et al., Docket No. A-2016-2537209
44. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2016-2543309
45. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2016-2543311
46. City of Dubois – Company, Docket No. R-2016-2554150
47. UGI Penn Natural Gas, Inc., Docket No. R-2016-2580030
48. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2017-2602627
49. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2017-2602633
50. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2017-2602638
51. Application of Pennsylvania American Water Company Acquisition of the Municipal Authority of the City of McKeesport, Docket No. A-2017-2606103
52. Pennsylvania American Water Company, Docket No. R-2017-2595853
53. Pennsylvania American Water Company Lead Line Petition, Docket No. P-2017-2606100
54. UGI Utilities, Inc. – Electric Division, Docket No. R-2017-2640058
55. Peoples Natural Gas Company, LLC – Peoples and Equitable Division 1307(f), Docket Nos. R-2018-2645278 & R-2018-3000236
56. Peoples Gas Company, LLC 1307(f), Docket No. R-2018-2645296

I&E Statement No. 4
Witness: Lassine Niambele

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Direct Testimony

of

Lassine Niambele

Bureau of Investigation & Enforcement

Concerning:

DISTRIBUTION INTEGRITY MANAGEMENT PLAN
PIPELINE REPLACEMENT
PIPELINE REPLACEMENT COSTS

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Lassine B. Niambele. I am a Fixed Utility Valuation Engineer in the
4 Pipeline Safety Division of the Pennsylvania Public Utility Commission's
5 (Commission) Bureau of Investigation and Enforcement (I&E). My business
6 address is Pennsylvania Public Utility Commission, 400 North Street, Harrisburg,
7 PA 17120.

8
9 **Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT EXPERIENCE?**

10 A. I attended Temple University and earned a Bachelor of Science Degree in Civil
11 Engineering in 2007. I received a master's degree in project management from
12 Keller Graduate School of Management in 2010. I joined the Pennsylvania Public
13 Utility Commission's Safety Division in September 2012.

14
15 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

16 A. The purpose of my testimony is to address Columbia Gas of Pennsylvania, Inc.
17 ("Columbia", "CPA" or "Company") pipeline replacement of bare steel, cast iron,
18 wrought iron, and vintage plastic pipe also known as first generation pipe. More
19 specifically, the purpose of my direct testimony will address the following issues:

20 A. Federal and state regulations Columbia is required to follow;

21 B. Columbia's Distribution Integrity Management Plan;

1 C. Pipeline replacements of bare steel, cast iron, wrought iron, and or vintage
2 plastic; and

3 D. Pipeline Replacement Costs including Restoration Costs.
4

5 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

6 A. Yes. I&E Exhibit No. 4 contains schedules relating to my testimony.
7

8 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS?**

9 A. I&E is responsible for protecting the public interest in proceedings before the
10 Commission. The I&E analysis in a rate proceeding is based on its responsibility
11 to represent the public interest. This responsibility requires the balancing of the
12 interests of ratepayers, the regulated utility, and the regulated community as a
13 whole.
14

15 **Q. DID ANY COMPANY WITNESS PROVIDE TESTIMONY ON**
16 **COLUMBIA'S PIPELINE REPLACEMENT?**

17 A. Yes, Columbia witnesses Huwar¹, Davidson², and Kitchell³ each discuss the
18 Company's plans for pipeline replacement.

¹ Columbia Statement No. 1, pp. 8-17.

² Columbia Statement No. 7, pp. 3-34.

³ Columbia Statement No. 14, pp. 3-21.

1 **Q. WHAT FEDERAL AND STATE REGULATIONS ARE CONTROLLING**
2 **REGARDING COLUMBIA’S PIPELINE REPLACEMENTS?**

3 A. CPA is mandated to adhere to the Distribution Integrity Management Program
4 (“DIMP”) under CFR 49 Part 192.1001-192.1015, Subpart P of the Code of
5 Federal Regulations. Additionally, utilities like Columbia, which are seeking to
6 continue a previously approved Distribution System Improvement Charge
7 (“DSIC”) mechanism are required to submit a Long-Term Infrastructure
8 Improvement Plan (“LTIIP”) pursuant to 52 Pa Code §121.1 and §121.3.

9
10 **Q. WHAT ARE THE REQUIREMENTS OF THE DIMP?**

11 A. The DIMP requires a natural gas utility to perform the following risk management
12 strategies:

- 13 1. Identify the threats to its facilities;
- 14 2. Evaluate and rank the risks of threats to the facilities;
- 15 3. Identify and implement measures to reduce risk;
- 16 4. Measure performance, monitor the results, and evaluate effectiveness;
- 17 5. Periodically evaluate and make improvements to the program; and
- 18 6. Report the results.

19 DIMP regulations require Columbia to identify the risks to its pipeline facilities
20 and to create a plan or plans to mitigate and reduce these risks. The Company
21 determines pipeline replacements by risk ranking the different pipeline types and
22 then replacing the pipe based on the highest risk ranking.

1 **Q. WHY MUST A NATURAL GAS DISTRIBUTION COMPANY COMPLY**
2 **WITH THE DIMP REGULATIONS?**

3 A. Pipeline and Hazardous Materials Safety Administration (“PHMSA”) created
4 DIMP regulations to reduce the number of US Department of Transportation (“US
5 DOT”) reportable incidents.⁴ Pipeline leaks from corrosion and third-party
6 damages⁵ are two of the main causes of reportable incidents.

7
8 **Q. WHY MUST A NATURAL GAS DISTRIBUTION COMPANY FILE AN**
9 **LTIP?**

10 A. A natural gas distribution company must submit an LTIP for Commission
11 approval to be eligible to recover the reasonable and prudently incurred costs
12 regarding the repair, improvement, and replacement of eligible property from the
13 DSIC. The Company must file an LTIP, because it provides information on the
14 infrastructure replacements and repairs that are needed. The LTIP should address
15 the replacement of aging infrastructure and must be sufficient to ensure safe and
16 reliable service.

⁴ A PHMSA reportable incident means any of the following events: (1) An event that involves a release of gas from a pipeline, or of liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and that results in one or more of the following consequences: (i) A death, or personal injury necessitating in-patient hospitalization; (ii) Estimated property damage of \$50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost; (iii) Unintentional estimated gas loss of three million cubic feet or more; (2) An event that results in an emergency shutdown of an LNG facility. Activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident. (3) An event that is significant in the judgment of the operator, even though it did not meet the criteria of paragraphs (1) or (2) of this definition.

⁵ Third Party Damages are defined as damages to natural gas facilities (or other such underground facilities) caused by someone other than the operator or the operator’s contractor.

1 **Q. WHAT ARE THE REQUIREMENTS OF AN LTIP?**

2 A. The LTIP must include the following elements:

3 1. Identification of types and age of eligible property owned and operated by the
4 utility for which it is seeking DSIC recovery;

5 2. An initial schedule for planned repair and replacement of eligible property;

6 3. A general description of location of eligible property;

7 4. A reasonable estimate of quantity of eligible property to be improved or
8 repaired;

9 5. Projected annual expenditures and means to finance the expenditures;

10 6. A description of the manner in which infrastructure replacement will be
11 accelerated and how repair, improvement or replacement will ensure and
12 maintain adequate, efficient, safe, reliable and reasonable service to customers;

13 7. A workforce management and training program designed to ensure that the
14 utility will have access to a qualified workforce to perform work in a cost-
15 effective, safe, and reliable manner; and

16 8. A description of a utility's outreach and coordination activities with other
17 utilities, Department of Transportation and local governments regarding the
18 planned maintenance/construction projects and roadways that may be impacted
19 by the LTIP. The LTIP must address only the specific property eligible for
20 DSIC recovery.⁶

⁶ See 52 Pa Code § 121.3.

1 **Q. HOW DOES THE COMPANY EVALUATE RISK?**

2 A. The Company evaluates the top threats to its facilities based on: (1) the DIMP
3 regulations; (2) pipeline safety issues identified by PHMSA; and (3) violations
4 cited by I&E's Pipeline Safety Division. CPA is required to implement pipeline
5 replacements based on its DIMP plan to reduce the risk to the Company's system
6 as required under DIMP regulations. DIMP compliance is not optional; it is a
7 regulation.

8
9 **Q. WHAT ARE THE INDUSTRY'S COMMON MITIGATION MEASURES**
10 **FOR HIGH RISK PIPELINE SEGMENTS?**

11 A. The industry's common mitigation measure to reduce risk is to replace the highest
12 risk pipelines first. As a company replaces the pipelines determined to be the
13 highest risk, risk should be reduced. The overall risk of the asset group will be
14 reduced as the riskiest pipeline is replaced, provided enough risky pipe is replaced
15 in that asset group to overcome increasing risks presented by remaining segments
16 within that group.

17
18 **Q. WHAT IS YOUR OPINION REGARDING COLUMBIA'S PIPELINE**
19 **REPLACEMENT?**

20 A. In my opinion, Columbia needs to continue its pipeline replacement effort and
21 O&M activities based on its DIMP to reduce the risks to the Company's systems,
22 as required under DIMP regulations. (CFR 49 Part 192.1001-192.1015 Subpart P).

1 According to the Company, pipeline replacements are one of the top methods to
2 mitigate the system risk. DIMP requires a regulated natural gas distribution utility
3 to identify the risks to its pipeline systems and then develop a plan to mitigate,
4 track, and measure the risk reduction in their system.

5
6 **Q. HAVE YOU REVIEWED CPA'S EVALUATION AND RISK RANKING IN**
7 **ITS DIMP AS IT RELATES TO REPLACEMENT AND BETTERMENT**
8 **PROJECTS?**

9 A. Yes. Columbia does not rank risks in sequential order; instead, the Company
10 categorizes risks as "High", "Medium", and "Low".⁷ The Company's risk
11 reduction is based on a qualitative risk reduction instead of a quantitative value
12 meaning the Company risk ranking is not based on numerical values. Based on
13 these categories, the Company cannot demonstrate if the system risk is decreasing.
14 The above-mentioned categories were referenced in the Company's current DIMP
15 Plan.

⁷ I&E Exhibit No. 4, Schedule No. 1.

1 **Q. HAS COLUMBIA MAINTAINED AN ADEQUATE AND SAFE PIPELINE**
2 **REPLACEMENT PROGRAM BASED UPON THE RESULTS OF ITS**
3 **DIMP?**

4 A. Based on the way the Company uses a qualitative as opposed to quantitative
5 designation, the Company cannot provide measurable proof of risk mitigation.

6 Annually, Columbia identifies the highest risk segments and prioritizes
7 those replacements each year. Columbia utilizes a software tool, Optimain, along
8 with operational knowledge as tools to identify the most efficient plan to
9 accomplish this goal.⁸ Optimain is a comprehensive software being used by all
10 NiSource gas distribution companies to help assess and prioritize the risk
11 associated with priority mains and allocate capital towards those risks.⁹
12 Columbia's approach targets larger geographic areas mixed with individual high-
13 risk segments to ensure efficient utilization of capital.¹⁰

14
15 **Q. HAVE YOU REVIEWED COLUMBIA'S EVALUATION AND RISK**
16 **RANKING IN ITS DIMP AS IT RELATES PIPELINE REPLACEMENT**
17 **AND BETTERMENT PROJECTS?**

18 A. Yes.

⁸ Columbia Gas Second LTIP (Order entered September 21, 2017) at Docket No. P-2017-2602917, pp. 11-12.

⁹ Columbia Gas Second LTIP (Order entered September 21, 2017) at Docket No. P-2017-2602917, pp 11-12.

¹⁰ Petition of Columbia Gas of Pennsylvania, Inc. for Approval of a Major Modification to its Existing Long-Term Infrastructure Improvement Plan and Approval of its Second Long-Term Infrastructure Improvement Plan at Docket No. P-2017-2602917, p. 11-12.

1 **Q. HOW DOES COLUMBIA’S RISK RANKING COMPARE YEAR TO**
2 **YEAR?**

3 A. Columbia changed its Risk Model in 2017 but has not normalized risk ranking
4 scores between data driven results and subject matter expert (“SME”) issued data.
5 These issues were discussed during the Company’s 2018 annual DIMP audit and
6 resulted in the issuance of a non-compliance letter in August of 2018. The
7 Company stated it will develop a process and procedure to normalize the two
8 different risk ranking scoring systems so the effectiveness of the DIMP plan can
9 be evaluated. The Company uses two risk evaluation model processes to evaluate
10 and rank its risks. Based on the provided information, a year to year comparison
11 may be possible but not adequate. Therefore, moving forward, the Company has
12 to address these issues as indicated in I&E witness Apetoh’s Direct Testimony,
13 I&E Statement No. 5. The expectation is that SMS and DIMP will work in concert
14 to continue to enhance overall system integrity.

15
16 **Q. CAN YOU DISCUSS COLUMBIA’S CAST IRON REPLACEMENT?**

17 A. Based on Columbia’s Annual DOT Report which combines cast iron and wrought
18 iron pipeline, the Company replaced 10 miles of cast iron/wrought iron in 2015,
19 10 miles of cast iron/wrought iron in 2016, 15 miles of cast iron/wrought iron in
20 2017, 11 miles cast iron/wrought iron in 2018 and 12.5 miles of cast iron/wrought

1 iron in 2019, resulting in a five year average of 11.7 miles per year.¹¹ Prior years
2 of cast iron replacement records were not available. However, at the end of 2014,
3 Columbia reported a combined 128 miles¹² remaining of cast iron and wrought
4 iron pipelines. In 2019, the Company reported 69.2 miles of cast iron and wrought
5 iron remaining; therefore, the Company removed 58.8 miles from its system in
6 that time period with an average of 11.76 miles per year. This shows a steady
7 decrease of cast iron and wrought iron pipelines each year since 2015.¹³

8
9 **Q. CAN YOU DESCRIBE COLUMBIA’S RISK REDUCTION ON MAINS**
10 **FROM 2015 TO 2019?**

11 A. According to the Company’s Annual DOT Reports from 2015 to 2019,
12 Columbia’s at-risk mains are decreasing each year, albeit at a slow rate. For
13 instance, at the end of 2015, the Company reported 7,460.4 miles¹⁴ of combined
14 pipeline mileage, of which 117.7 miles¹⁵ were cast iron and wrought iron and
15 1,415 miles¹⁶ were unprotected steel. Therefore, 20.5 percent of the Company’s
16 system was comprised of at-risk mains. According to the Company’s Annual
17 DOT Report submitted in 2019, Columbia had 7,656.4 miles of total pipelines¹⁷,

¹¹ I&E Exhibit No. 4, Schedule No. 2, Schedule No. 3 and Schedule No. 4.

¹² I&E Exhibit No. 4, Schedule No. 2, Schedule No. 3 and Schedule No. 4.

¹³ I&E Exhibit No. 4, Schedule No. 2, Schedule No. 3 and Schedule No. 4.

¹⁴ I&E Exhibit No. 4, Schedule No. 2, p. 2, Schedule No. 3 and Schedule No. 4.

¹⁵ I&E Exhibit No. 4, Schedule No. 2, p. 2 and Schedule No. 5.

¹⁶ I&E Exhibit No. 4, Schedule No. 2, p. 2 and Schedule No. 5.

¹⁷ I&E Exhibit No. 4, Schedule No. 5, p. 1 and Schedule No. 5.

1 including 69.2 miles of cast iron and wrought iron¹⁸ and 1,112 miles of
2 unprotected steel.¹⁹ These numbers yield a system at-risk main percentage of 15.8
3 percent.²⁰

4 Columbia's system miles as stated in the Department of Transportation
5 Annual Report²¹ shows that the Company only replaced 4.7 percent of the at-risk
6 system for the last five years. If the Company continues with the same
7 replacement rate, it may take them at least 15 years to eliminate all risky pipes.

8
9 **Q. PLEASE DISCUSS COLUMBIA'S BARE STEEL REPLACEMENT?**

10 A. Columbia's capital prioritization process for replacement projects addresses the
11 highest risks identified in the Company's DIMP and is designed to systematically
12 eliminate those risks on a priority basis.

13 Based on numbers provided in the LTIIP and on recent DOT reports, the
14 Company had 1,415 miles of bare steel in 2015²² and 1,112 miles in 2019.²³ The
15 Company replaced 303 miles of bare steel in five years with an average of 60
16 miles per year.

¹⁸ I&E Exhibit No. 4, Schedule No. 2, p. 26 and Schedule No. 5.

¹⁹ I&E Exhibit No. 4, Schedule No. 2, p. 26 and Schedule No. 5.

²⁰ I&E Exhibit No. 4, Schedule No. 2, p. 26 and Schedule No. 5.

²¹ I&E Exhibit No. 4, Schedule No. 2 and Schedule No. 5.

²² I&E Exhibit No. 4, Schedule No. 2, p. 2 and Schedule No. 5.

²³ I&E Exhibit No. 4, Schedule No. 2, p. 26 and Schedule No. 5.

1 **Q. HOW DOES COLUMBIA’S LTIIIP ADDRESS PIPELINE**
2 **REPLACEMENT?**

3 A. Columbia filed its LTIIIP with the Commission in 2017 at Docket No. P-2017-
4 2602917. Columbia averred in the LTIIIP filing that it experienced an increasing
5 number of leaks in areas with a high concentration of aging pipe. Columbia stated
6 that its corrosion leaks represented 65% of all leakage that occurs on main lines in
7 its system.²⁴ Columbia stated in the LTIIIP that removal of bare steel and cast-iron
8 pipe will reduce the Company’s leakage based on corrosion.²⁵

9
10 **Q. WHAT IS THE COMPANY’S STATED TIME FRAME IN THE LTIIIP FOR**
11 **PIPELINE REPLACEMENT?**

12 A. Columbia’s LTIIIP claims that the Company will replace all cast iron and bare steel
13 pipe in its system by 2029.²⁶

14
15 **Q. WILL COLUMBIA MEET THE REPLACEMENT GOALS IN ITS LTIIIP**
16 **PLAN?**

17 A. I am concerned that the Company will not meet its 2029 target. Based on the
18 numbers provided in the LTIIIP, on January 1, 2017, Columbia had 1,350 miles of

²⁴ Petition of Columbia Gas of Pennsylvania, Inc. for Approval of a Major Modification to its Existing Long-Term Infrastructure Improvement Plan and Approval of its Second Long-Term Infrastructure Improvement Plan at Docket No. P-2017-2602917, p. 6.

²⁵ Columbia Gas Second LTIIIP (Order entered September 21, 2017) at Docket No. P-2017-2602917, pp. 10-11.

²⁶ Columbia Gas Second LTIIIP (Order entered September 21, 2017) at Docket No. P-2017-2602917, p. 5.

1 unprotected bare steel mains, 24.5 miles of cast iron mains, and 83 miles of
2 wrought iron mains in its distribution system.²⁷

3 In order for the Company to hit its target date of replacement, the Company
4 must replace or retire on average, over 100 miles of pipe per year from the date
5 this plan was filed in 2017. Company witness Huwar’s testimony indicated that,
6 Columbia replaced 91 miles of priority pipes in 2016, 96 miles of priority pipes in
7 2017, 57 miles of priority pipes in 2018 and 98 miles of priority pipes in 2019.²⁸
8 Although the Company may be ahead of its projected five-year goal in the LTIIIP,
9 at the current pace, Columbia will not meet its planned 2029 target date for
10 replacement of all bare steel, cast-iron, and wrought iron mains. Even though the
11 mileage of at risk pipe is decreasing, the Company would need to replace at least
12 112 miles of pipe each year from 2017 to 2029 in order to meet its planned target
13 date of 2029. The Company’s current LTIIIP plan expires at the end of 2022, at
14 which point the Company will need to file a new LTIIIP plan for the next five
15 years. Although the Company may increase the amount of pipeline replacement in
16 the next LTIIIP, it is not guaranteed that the Company will meet its 2029
17 replacement target date. Based on the fact that less than the 112 miles were
18 replaced in 2017, 2018 and 2019, the Company would now need to retire
19 approximately 118 miles per year for years 2020 through 2029.

²⁷ Petition of Columbia Gas of Pennsylvania, Inc. for Approval of a Major Modification to its Existing Long-Term Infrastructure Improvement Plan and Approval of its Second Long-Term Infrastructure Improvement Plan at Docket No. P-2017-2602917, p. 3.

²⁸ Columbia Statement No. 1, p. 13, figure 3.

1 **Q. HOW DID YOU DETERMINE THE 112 AND 118 MILES OF PIPE**
2 **ABOVE?**

3 A. The Company states in their LTIP that 1,457 miles remained to be replaced in
4 2017. The 2029 completion goal, stated in the LTIP, is a 13-year plan from 2017
5 through 2029, so dividing 1,457 miles by 13 years yields 112 miles per year. The
6 Company reported in the 2019 DOT Annual report 1,181 miles of unprotected
7 steel, cast iron and wrought iron. With 10 years remaining in the 13-year plan, the
8 Company would need to replace 118 miles per year to meet the LTIP goal.

9
10 **Q. DOES COLUMBIA'S DIMP DEMONSTRATE RISK REDUCTION FOR**
11 **EACH ASSET CLASS?**

12 A. Columbia's replacement of bare steel and cast iron is the main leading program to
13 address risks in its DIMP. The Company looks to three main indicators to
14 measure risk reduction; the good measurable progress on the LTIP program, the
15 removal of bare steel and cast-iron pipelines, and the reduction of type 2 leaks.²⁹
16 The Company uses the Optimain risk model to prioritize the replacement of the
17 aging pipes. Data from the Company's recent LTIP and Columbia's responses to
18 I&E-GS-1³⁰ and I&E-GS-12³¹ interrogatories showed the removal of
19 approximately 436 miles of priority pipe from 2015 to 2019 and the overall

²⁹ I&E Exhibit No. 4, Schedule No. 6, p. 1.

³⁰ I&E Exhibit No. 4, Schedule No. 3.

³¹ I&E Exhibit No. 4, Schedule No. 6.

1 reduction in the number of open type-2 leaks.³² The highest risk scores were
2 recorded in 2017 where, according to the Company’s Optimain program, the
3 cumulative score was 571,627 or an increase of 8,923 from the prior year.³³ Per
4 the Company, the increase in 2017 could be attributed to the improvements made
5 to its Optimain risk scoring process. In 2015, the Company replaced
6 approximately 94 miles of priority pipes, while in 2019, Columbia replaced 98
7 miles.³⁴ However, that does not necessarily mean that the correct riskiest assets
8 are being replaced first. Optimain risk scores by capital project are not readily
9 available as the Company uses Optimain to build necessary replacement projects,
10 not to track scores of completed capital projects.³⁵ However, the Company does
11 maintain historic annual Optimain risk scores by total pipe segments.

12
13 **Q. HAS I&E’S PIPELINE SAFETY DIVISION PREVIOUSLY FOUND**
14 **ISSUES WITH THE COMPANY’S DIMP?**

15 A. Yes. On July 31 and August 1, 2018, the Pipeline Safety Division conducted
16 Columbia’s annual DIMP audit and discovered the plan was deficient as the
17 Company did not fully implement sections of the Code of Federal Regulations
18 (“CFR”). Columbia changed its Risk Model in 2017 but has not normalized risk
19 ranking scores between data driven results and SME issued data. These issues

³² I&E Exhibit No. 4, Schedule No. 6, p. 2.

³³ I&E Exhibit No. 4, Schedule No. 6, p. 2.

³⁴ I&E Exhibit No. 4, Schedule No. 6, p. 2.

³⁵ I&E Exhibit No. 4, Schedule No. 6, p. 2.

1 were brought up during the Company's 2018 annual DIMP audit and resulted in
2 the issuance of the non-compliance letter in August of 2018. The Company's
3 response to the non-compliance letter stated that it will develop a process and
4 procedure to normalize the two different risk ranking scoring systems so the
5 effectiveness of the DIMP plan can be evaluated. Inspectors met with the
6 Company in December of 2019, at that time the Company was in the process of
7 finalizing its DIMP to include changes to address I&E's concerns. I&E was
8 informed during this proceeding that the plan changes were completed and was
9 provided a copy of the DIMP plan for review. I&E will conduct a more thorough
10 inspection at a later date to review the changes. I&E witness Apetoh addresses this
11 issue further in I&E Statement No. 5.

12
13 **Q. DID YOU REVIEW THE COMPANY'S PIPELINE REPLACEMENT**
14 **COSTS?**

15 A. Yes. Columbia's capital project costs are increasing each year from 2015 through
16 2017 and in 2019.³⁶ Specifically, the increasing costs include paving and
17 restoration costs, construction overhead, and other costs. According to the
18 Company, the decreased costs for 2018 were due to the Merrimack Valley,
19 Massachusetts incident. Specifically, the Company replaced less pipeline mileage

³⁶ Columbia Statement No. 14, p. 4.

1 in 2018 because many of their resources were sent to Massachusetts for the mutual
2 aid response.³⁷

3 Mr. Kitchell's direct testimony³⁸ outlined the increasing pipeline
4 replacement costs from 2008 to 2019. The average cost for replaced priority pipes
5 in 2008 was \$81.25 per foot and in 2019 it was \$235.00 per foot.³⁹ During that
6 period, Columbia replaced or retired approximately 1,010 miles of priority pipe⁴⁰
7 for an average of 84 miles per year.

8
9 **Q. WHAT IS A DRIVING FACTOR OF THE INCREASED PIPELINE**
10 **REPLACEMENT COSTS?**

11 A. I am concerned that municipal restoration requirements continue to drive up the
12 overall replacement cost.

13
14 **Q. CAN YOU PLEASE PROVIDE SPECIFIC EXAMPLES THAT**
15 **ILLUSTRATE THIS CONCERN.**

16 A. Yes. Phase 1 of Project 1317068 located in the South Side of the City of
17 Pittsburgh was \$1,634,598.32. The actual paving and restoration cost was
18 \$1,161,369.39, which equates to 71%.⁴¹ Another project, identified as Project
19 1531242, or The Glenwood Replacement Project, located in Glenwood, PA, had a

³⁷ Columbia Statement No. 1, p. 13, line 3-9.

³⁸ Columbia Statement No. 14, p. 4.

³⁹ Columbia Statement No. 14, p. 4, line 13-16.

⁴⁰ Columbia Statement No. 1, p. 13, figure 3.

⁴¹ I&E Exhibit No. 4, Schedule No. 7, p. 4.

1 total actual cost of \$260,233.31. The project's actual paving and restoration cost
2 was \$202,200.35, which equates to 78%, of the total budget.⁴²

3 These projects stood out because of the high restoration costs relative to the
4 total project costs.

5
6 **Q. ARE THERE OTHER FACTORS IMPACTED BY HIGH RESTORATION**
7 **COSTS?**

8 A. Yes. Generally speaking, the more money Columbia spends on restoration costs,
9 the fewer miles of pipeline it can replace annually with its budgeted pipeline
10 replacement dollars. The increase in restoration costs, or other cost increases, per
11 mile of pipeline replaced reduces the number of miles of risky pipes Columbia can
12 potentially remove from service. The fewer projects the Company completes in a
13 year equates to fewer miles of risky pipe being replaced, which affects the
14 reduction in total pipeline risk. The goal is to make the system safer by
15 remediating or removing risky assets while doing this in the most efficient and
16 cost-effective manner possible.

17
18 **Q. WHAT CAN THE COMPANY DO TO REDUCE COSTS?**

19 A. The Company should continue to work on driving down all costs associated with
20 pipeline replacement, paying attention to the category with the largest increase,

⁴² I&E Exhibit No. 4, Schedule 7, p. 10.

1 including paving and restoration costs. Development of a plan that reduces
2 replacement cost would allow completion of additional pipeline replacement
3 projects. I recommend that the Company draft a cost reduction plan to be
4 submitted to I&E Pipeline Safety Division within the 60 days of the final Order in
5 this proceeding. That plan should outline Columbia's proposed cost containment
6 measures and those reduction measures should be reflected in an update to the
7 Company's LTIP. Columbia would need to make an effort to negotiate better
8 contracts and coordinate projects with other utility companies and local
9 governments to keep costs down. The first item would be to itemize expenses on
10 pipeline replacement projects. For example, Columbia may need to consider a
11 competitive bid process for paving to evaluate potential cost savings amongst
12 available paving contractors. The Company could also conceivably save on paving
13 restoration costs when the option of pipeline placement in a private right of way
14 vs. a public right of way exists for a specific project. If the Company were to
15 reduce restoration costs by prudently spending on pipeline replacement, it would
16 be able to accelerate risk reduction and save money. In order to facilitate reduced
17 spending, I recommend that the Company review the 10 largest projects each year
18 to see if there are any unnecessary or avoidable costs, including excessive
19 restoration costs.

20
21 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

22 **A.** Yes.

**I&E Exhibit No. 4
Witness: Lassine Niambele**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Exhibit to Accompany

The

Direct Testimony

Of

Lassine Niambele

Bureau of Investigation and Enforcement

Concerning:

**DISTRIBUTION INTEGRITY MAMAGEMENT PLAN
PIPELINE REPLACEMENT
PIPELINE REPLACEMENT COSTS**

Question No. I&E-GS-004
Respondent: M. Davidson
Page 1 of 2

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-004:

Reference Distribution Integrity Management Program or DIMP on page 27 of Columbia Gas Statement No. 7. Please provide a list of the top 5 risks to Columbia Gas system and how the company is addressing these risks.

Response:

Columbia does not rank risks in sequential order. Risks are categorized as “High”, “Medium”, and “Low”. The “High Risks,” as well as what Columbia is doing to address these risks, are represented below.

Third Party Damages
External Corrosion
Over Pressure
Cast Iron
Cross Bores
Field Assembled Risers

Third Party Damages

- Electronic marker installation in areas difficult to locate and other strategic locations.
- State Damage Prevention Team.
- Monthly Damage Prevention Meetings.
- Frequent Damager Program.
- Hiring of Damage Prevention Specialists in each operating area.
- QA/QC on Line Locating.
- Establishment of Facility Records Enhancement Team.
- GPS Program.
- Tracking and identification of First and Second party damages.
- Locating Buried Control Lines at Regulator Stations.
- Additional Protection at Regulator Stations.

Question No. I&E-GS-004
Respondent: M. Davidson
Page 2 of 2

External Corrosion

- Accelerated Pipe Replacement Program.
- Replacement of Company Owned Facilities.
- Annual Supplemental Bare Steel Survey.
- Supplemental Leak Survey on pipe on the Active Corrosion Log.

Over Pressure

- Enhanced Overpressure Protection.
- Inspection of Pressure Regulators.
- Expediting the replacement of Low Pressure Systems.
- Locating Buried Control Lines at Regulator Stations.
- Additional Protection at Regulator Stations from Vandalism and Excavations.
- Implement Remote Monitoring on Low Pressure Systems.
- Reduce Bypass Over-Pressurization Risk.
- Installing Strainers at Regulator Stations.

Cast Iron

- Accelerated Pipe Replacement Program.
- Additional Frost Patrols.

Cross Bores

- Legacy Cross Program and Prioritization.
- Public Awareness Cross Bore Communications within the identified areas.

Field Assembled Risers

- Company Owned Riser Replacement Program.
- Replacement of Customer Owned Field Assembled Risers

Question No. I&E-GS-017
Respondent: M. Davidson
Page 1 of 1

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-017:

**Reference PHMSA Annual Reports on page 19 of Columbia Gas Statement No. 7.
Please provide the company's annual DOT reports, from 2015 through 2019.**

Response:

Please see the following attachments:

- **I&E-GS-017 Attachment A – 2015 DOT Report**
- **I&E-GS-017 Attachment B – 2016 DOT Report**
- **I&E-GS-017 Attachment C – 2016 DOT Supplemental Report**
- **I&E-GS-017 Attachment D – 2017 DOT Report**
- **I&E-GS-017 Attachment E – 2017 DOT Supplemental Report**
- **I&E-GS-017 Attachment F – 2018 DOT Report**
- **I&E-GS-017 Attachment G – 2019 DOT Report**

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 5/31/2018



U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/14/2016

Form Type:

INITIAL

Date
Submitted:

ANNUAL REPORT FOR CALENDAR YEAR 2015 GAS DISTRIBUTION SYSTEM

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20165696-28465

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1415.0 | 0 | 22.5 | 1708.8 | 4159.0 | 117.7 | 0 | 0 | 37.4 | 0 | 7460.4 |
| NO. OF SERVICES | 53494 | 0 | 850 | 64600 | 303108 | 0 | 0 | 0 | 0 | 0 | 422052 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 719.1 | 1210.2 | 953.9 | 198.7 | 63.4 | 3146.3 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.9 | 43.5 | 54.0 | 13.9 | 0 | 117.7 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0.1 | 1945.7 | 1563.2 | 649.9 | 0.1 | 0 | 4159 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 36.3 | 0.4 | 0.2 | 0.3 | 0.1 | 0.1 | 37.4 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 37.8 | 2671.1 | 2817.1 | 1658.1 | 212.8 | 63.5 | 7460.4 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 38623 | 79383 | 926 | 8 | 4 | 118944 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 277795 | 23697 | 1599 | 17 | 0 | 303108 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 316418 | 103080 | 2525 | 25 | 4 | 422052 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|--------|
| MILES OF MAIN | 453.3 | 466.9 | 161.6 | 795.4 | 968.8 | 547.3 | 1034.0 | 1069.5 | 1134.1 | 829.5 | 7460.4 |
| NUMBER OF SERVICES | 0 | 18519 | 8932 | 28873 | 56339 | 29304 | 67090 | 76754 | 75180 | 61061 | 422052 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 2419 | 179 | 720 | 113 |
| NATURAL FORCE DAMAGE | 49 | 8 | 49 | 8 |
| EXCAVATION DAMAGE | 98 | 94 | 180 | 180 |
| OTHER OUTSIDE FORCE DAMAGE | 11 | 4 | 30 | 29 |
| PIPE, WELD OR JOINT FAILURE | 234 | 32 | 403 | 64 |
| EQUIPMENT FAILURE | 120 | 2 | 210 | 65 |
| INCORRECT OPERATIONS | 57 | 12 | 138 | 32 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 937

PART D - EXCAVATION DAMAGE

PART E-EXCESS FLOW VALUE(EFV) DATA

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 277

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 10477

- a. One-Call Notification Practices Not Sufficient: 51
- b. Locating Practices Not Sufficient: 89
- c. Excavation Practices Not Sufficient: 137
- d. Other: 0

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 118416

2. NUMBER OF EXCAVATION TICKETS : 114384

PART F - LEAKS ON FEDERAL LAND

PART G-PERCENT OF UNACCOUNTED FOR GAS

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.7%

PART H - ADDITIONAL INFORMATION

PART I - PREPARER

| | |
|--|--|
| | |
| Brian Powell, Integrity Management Engineer (Preparer's Name and Title) | (614) 481-1069 (Area Code and Telephone Number) |
| | |
| bpowell@nisource.com (Preparer's email address) | (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 1/31/2018



U.S Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/14/2017

Form Type:

SUPPLEMENTAL

Date Submitted:

05/04/2018

**ANNUAL REPORT FOR
 CALENDAR YEAR 2016
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION (DOT use only) 20177125-36488

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

| 1.GENERAL | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1327.3 | 0 | 22.8 | 1704.4 | 4303.9 | 107.5 | 0 | 0 | 34.6 | 0 | 7500.5 |
| NO. OF SERVICES | 50430 | 0 | 865 | 64661 | 309082 | 0 | 0 | 0 | 0 | 0 | 425038 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 700.1 | 1160.8 | 932.8 | 196.8 | 63.0 | 3054.5 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.7 | 38.9 | 49.7 | 12.8 | 0 | 107.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2007.5 | 1608.3 | 688.0 | 0.1 | 0 | 4303.9 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 33.7 | 0.3 | 0.2 | 0.3 | 0.1 | 0 | 34.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 35.1 | 2713.6 | 2808.2 | 1670.8 | 209.8 | 63 | 7500.5 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 37649 | 77388 | 902 | 8 | 9 | 115956 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 283293 | 24158 | 1599 | 32 | 0 | 309082 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 320942 | 101546 | 2501 | 40 | 9 | 425038 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 435.2 | 438.3 | 154.2 | 769.5 | 954.2 | 537.3 | 1025.5 | 1061.8 | 1119.8 | 1004.7 | 7500.5 |
| NUMBER OF SERVICES | 0 | 17743 | 8705 | 28210 | 55369 | 27723 | 65363 | 75520 | 74192 | 72213 | 425038 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1842 | 122 | 773 | 97 |
| NATURAL FORCE DAMAGE | 18 | 6 | 77 | 9 |
| EXCAVATION DAMAGE | 90 | 85 | 212 | 209 |
| OTHER OUTSIDE FORCE DAMAGE | 5 | 3 | 16 | 16 |
| PIPE, WELD OR JOINT FAILURE | 178 | 19 | 445 | 73 |
| EQUIPMENT FAILURE | 71 | 0 | 74 | 42 |
| INCORRECT OPERATIONS | 28 | 7 | 173 | 11 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 594

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 294

- a. One-Call Notification Practices Not Sufficient: 40
- b. Locating Practices Not Sufficient: 85
- c. Excavation Practices Not Sufficient: 169
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 118118

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 13400

Estimated Number Of Services with EFV In the System At End Of Year: 131961

* Total Number of Manual Service Line Shut-off Valves Installed During Year:

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year:

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 0.8%

PART H - ADDITIONAL INFORMATION

| PART I - PREPARER | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 460-6443 (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 460-8417 (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 5/31/2018



U.S Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/14/2017

Form Type:

INITIAL

Date Submitted:

**ANNUAL REPORT FOR
 CALENDAR YEAR 2016
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20177125-31882

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1.GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1327.3 | 0 | 22.8 | 1704.4 | 4303.9 | 107.5 | 0 | 0 | 34.6 | 0 | 7500.5 |
| NO. OF SERVICES | 50430 | 0 | 865 | 64661 | 309082 | 0 | 0 | 0 | 0 | 0 | 425038 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|-----------|---------------|----------------------------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 700.1 | 1160.8 | 932.8 | 196.8 | 63.0 | 3054.5 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.7 | 38.9 | 49.7 | 12.8 | 0 | 107.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2007.5 | 1608.3 | 688.0 | 0.1 | 0 | 4303.9 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 33.7 | 0.3 | 0.2 | 0.3 | 0.1 | 0 | 34.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 35.1 | 2713.6 | 2808.2 | 1670.8 | 209.8 | 63 | 7500.5 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | AVERAGE SERVICE LENGTH: 52 | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 37649 | 77388 | 902 | 8 | 9 | 115956 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 283293 | 24158 | 1599 | 32 | 0 | 309082 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 320942 | 101546 | 2501 | 40 | 9 | 425038 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 435.2 | 438.3 | 154.2 | 769.5 | 954.2 | 537.3 | 1025.5 | 1061.8 | 1119.8 | 1004.7 | 7500.5 |
| NUMBER OF SERVICES | 0 | 17743 | 8705 | 28210 | 55369 | 27723 | 65363 | 75520 | 74192 | 72213 | 425038 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1842 | 122 | 773 | 97 |
| NATURAL FORCE DAMAGE | 18 | 6 | 77 | 9 |
| EXCAVATION DAMAGE | 90 | 85 | 212 | 209 |
| OTHER OUTSIDE FORCE DAMAGE | 5 | 3 | 16 | 16 |
| PIPE, WELD OR JOINT FAILURE | 178 | 19 | 445 | 73 |
| EQUIPMENT FAILURE | 71 | 0 | 74 | 42 |
| INCORRECT OPERATIONS | 28 | 7 | 173 | 11 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 594

PART D - EXCAVATION DAMAGE

PART E-EXCESS FLOW VALUE(EFV) DATA

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 293

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 13400

- a. One-Call Notification Practices Not Sufficient: 40
- b. Locating Practices Not Sufficient: 85
- c. Excavation Practices Not Sufficient: 168
- d. Other: 0

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 131961

2. NUMBER OF EXCAVATION TICKETS : 118118

PART F - LEAKS ON FEDERAL LAND

PART G-PERCENT OF UNACCOUNTED FOR GAS

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 0.8%

PART H - ADDITIONAL INFORMATION

PART I - PREPARER

| | |
|--|--|
| | |
| Brian Powell, Integrity Management Engineer (Preparer's Name and Title) | (614) 481-1069 (Area Code and Telephone Number) |
| | |
| bpowell@nisource.com (Preparer's email address) | (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 1/31/2018



U.S. Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2018

Form Type:

INITIAL

Date Submitted:

**ANNUAL REPORT FOR
 CALENDAR YEAR 2017
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20188736-35886

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W Nationwide Blvd. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1248.2 | 0 | 23.5 | 1688 | 4464.3 | 92.5 | 0 | 0 | 31.9 | 0 | 7548.4 |
| NO. OF SERVICES | 47795 | 0 | 865 | 64667 | 316205 | 0 | 0 | 0 | 0 | 0 | 429532 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 673.8 | 1112.8 | 913.7 | 196.3 | 63 | 2959.7 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.5 | 35.4 | 42.1 | 9.5 | 0 | 92.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2069.6 | 1659.3 | 735.3 | 0.1 | 0 | 4464.3 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 31.9 | 0 | 0 | 0 | 0 | 0 | 31.9 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 32 | 2748.9 | 2807.5 | 1691.1 | 205.9 | 63 | 7548.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 36797 | 75628 | 390 | 503 | 9 | 113327 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 289845 | 24725 | 1599 | 35 | 1 | 316205 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 326642 | 100353 | 1989 | 538 | 10 | 429532 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 414.8 | 399.6 | 145.1 | 750.2 | 941.6 | 527.2 | 1015.3 | 1051.6 | 1112.1 | 1190.9 | 7548.4 |
| NUMBER OF SERVICES | 0 | 17025 | 8449 | 27744 | 54445 | 26410 | 63806 | 74235 | 73255 | 84163 | 429532 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1588 | 113 | 491 | 95 |
| NATURAL FORCE DAMAGE | 106 | 103 | 143 | 142 |
| EXCAVATION DAMAGE | 52 | 5 | 64 | 14 |
| OTHER OUTSIDE FORCE DAMAGE | 3 | 3 | 17 | 16 |
| PIPE, WELD OR JOINT FAILURE | 120 | 15 | 244 | 59 |
| EQUIPMENT FAILURE | 59 | 1 | 100 | 14 |
| INCORRECT OPERATIONS | 59 | 5 | 134 | 14 |
| OTHER CAUSE | 4 | 1 | 2 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 672

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 238

- a. One-Call Notification Practices Not Sufficient: 29
- b. Locating Practices Not Sufficient: 77
- c. Excavation Practices Not Sufficient: 132
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 121839

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 16366

Estimated Number Of Services with EFV In the System At End Of Year: 145743

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 816

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 196874

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.4%

PART H - ADDITIONAL INFORMATION

| PART I - PREPARER | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 460-6443 (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 460-8417 (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 1/31/2018



U.S Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2018

Form Type:

SUPPLEMENTAL

Date Submitted:

02/12/2020

**ANNUAL REPORT FOR
 CALENDAR YEAR 2017
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20188736-39482

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W Nationwide Blvd. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1.GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1248.2 | 0 | 23.5 | 1688 | 4464.3 | 92.5 | 0 | 0 | 31.9 | 0 | 7548.4 |
| NO. OF SERVICES | 47795 | 0 | 865 | 64667 | 316205 | 0 | 0 | 0 | 0 | 0 | 429532 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 673.8 | 1112.8 | 913.7 | 196.3 | 63 | 2959.7 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.5 | 35.4 | 42.1 | 9.5 | 0 | 92.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2069.6 | 1659.3 | 735.3 | 0.1 | 0 | 4464.3 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 31.9 | 0 | 0 | 0 | 0 | 0 | 31.9 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 32 | 2748.9 | 2807.5 | 1691.1 | 205.9 | 63 | 7548.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 36797 | 75628 | 390 | 503 | 9 | 113327 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 289845 | 24725 | 1599 | 35 | 1 | 316205 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 326642 | 100353 | 1989 | 538 | 10 | 429532 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 414.8 | 399.6 | 145.1 | 750.2 | 941.6 | 527.2 | 1015.3 | 1051.6 | 1112.1 | 1190.9 | 7548.4 |
| NUMBER OF SERVICES | 0 | 17025 | 8449 | 27744 | 54445 | 26410 | 63806 | 74235 | 73255 | 84163 | 429532 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1588 | 113 | 491 | 95 |
| NATURAL FORCE DAMAGE | 52 | 5 | 64 | 14 |
| EXCAVATION DAMAGE | 106 | 103 | 143 | 142 |
| OTHER OUTSIDE FORCE DAMAGE | 3 | 3 | 17 | 16 |
| PIPE, WELD OR JOINT FAILURE | 120 | 15 | 244 | 59 |
| EQUIPMENT FAILURE | 59 | 1 | 100 | 14 |
| INCORRECT OPERATIONS | 59 | 5 | 134 | 14 |
| OTHER CAUSE | 4 | 1 | 2 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 672

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 238

- a. One-Call Notification Practices Not Sufficient: 29
- b. Locating Practices Not Sufficient: 77
- c. Excavation Practices Not Sufficient: 132
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 121839

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 16366

Estimated Number Of Services with EFV In the System At End Of Year: 145743

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 816

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 196874

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (PURCHASED GAS + PRODUCED GAS) EQUALS PERCENT UNACCOUNTED FOR.

INPUT FOR YEAR ENDING 6/30: 1.4%

PART H - ADDITIONAL INFORMATION

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614)460-6443 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614)460-8417 _____ (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 10/31/2021



U.S Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2019

Form Type:

SUPPLEMENTAL

Date Submitted:

05/01/2019

**ANNUAL REPORT FOR
 CALENDAR YEAR 2018
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION (DOT use only) 20190902-38763

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W. Nationwide Blvd. |
| 2b. City and County | Columbus Franklin |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

| 1.GENERAL | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1203.4 | 0 | 21.2 | 1684.8 | 4601.7 | 81.5 | 0 | 0 | 29.6 | 0 | 7622.2 |
| NO. OF SERVICES | 45815 | 0 | 808 | 64144 | 321511 | 0 | 0 | 0 | 0 | 0 | 432278 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 654.7 | 1081 | 914.2 | 196.7 | 62.7 | 2909.4 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.1 | 31 | 37.1 | 8.3 | 0 | 81.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2136.4 | 1697.4 | 767.8 | 0.1 | 0 | 4601.7 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 28.5 | 0.4 | 0.3 | 0.3 | 0.1 | 0 | 29.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 28.6 | 2796.6 | 2809.7 | 1719.4 | 205.2 | 62.7 | 7622.2 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 35963 | 73916 | 384 | 495 | 9 | 110767 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 294730 | 25142 | 1590 | 48 | 1 | 321511 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 330693 | 99058 | 1974 | 543 | 10 | 432278 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 403.2 | 379 | 138.9 | 747.1 | 924.7 | 522 | 1009.3 | 1042.7 | 1106.4 | 1348.9 | 7622.2 |
| NUMBER OF SERVICES | 0 | 16436 | 8209 | 27297 | 53444 | 24800 | 61919 | 72801 | 72240 | 95132 | 432278 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1337 | 174 | 502 | 87 |
| NATURAL FORCE DAMAGE | 47 | 5 | 70 | 9 |
| EXCAVATION DAMAGE | 108 | 105 | 178 | 176 |
| OTHER OUTSIDE FORCE DAMAGE | 7 | 4 | 12 | 11 |
| PIPE, WELD OR JOINT FAILURE | 147 | 18 | 371 | 70 |
| EQUIPMENT FAILURE | 60 | 2 | 36 | 8 |
| INCORRECT OPERATIONS | 94 | 13 | 159 | 25 |
| OTHER CAUSE | 7 | 2 | 7 | 3 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 558

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 295

- a. One-Call Notification Practices Not Sufficient: 32
- b. Locating Practices Not Sufficient: 82
- c. Excavation Practices Not Sufficient: 181
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 141592

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 14595

Estimated Number Of Services with EFV In the System At End Of Year: 158518

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 757

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 190394

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL CONSUMPTION FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS) TIMES 100 EQUALS PERCENT UNACCOUNTED FOR.

FOR YEAR ENDING 6/30: 1.8%

PART H - ADDITIONAL INFORMATION

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|---|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 481-1064 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 481-1004 _____ (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
 EXPIRATION DATE: 10/31/2021



U.S Department of Transportation
 Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/13/2020

Form Type:

INITIAL

Date Submitted:

**ANNUAL REPORT FOR
 CALENDAR YEAR 2019
 GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION (DOT use only) **20201266-40565**

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W NATIONWIDE BLVD. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

| 1.GENERAL | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1112 | 0 | 21.1 | 1664 | 4762 | 69.2 | 0 | 0 | 28.1 | 0 | 7656.4 |
| NO. OF SERVICES | 42695 | 0 | 808 | 63892 | 326273 | 0 | 0 | 0 | 0 | 0 | 433668 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 631.8 | 1031.8 | 877.8 | 194 | 61.6 | 2797.1 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 4.5 | 25 | 32.8 | 6.9 | 0 | 69.2 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2206.9 | 1749.5 | 803.9 | 1.7 | 0 | 4762 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 27 | 0.4 | 0.3 | 0.3 | 0.1 | 0 | 28.1 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 27.1 | 2843.6 | 2806.6 | 1714.8 | 202.7 | 61.6 | 7656.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 34878 | 71685 | 338 | 485 | 9 | 107395 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 299114 | 25516 | 1298 | 344 | 1 | 326273 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 333992 | 97201 | 1636 | 829 | 10 | 433668 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| MILES OF MAIN | 373.7 | 348.8 | 130.2 | 720.3 | 908.2 | 513.4 | 995.6 | 1034.3 | 1095.1 | 1536.8 | 7656.4 |
| NUMBER OF SERVICES | 0 | 15793 | 7943 | 26868 | 51729 | 22997 | 59629 | 71327 | 71068 | 106314 | 433668 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1661 | 136 | 484 | 80 |
| NATURAL FORCE DAMAGE | 76 | 8 | 78 | 12 |
| EXCAVATION DAMAGE | 106 | 105 | 173 | 171 |
| OTHER OUTSIDE FORCE DAMAGE | 4 | 1 | 10 | 10 |
| PIPE, WELD OR JOINT FAILURE | 170 | 16 | 354 | 46 |
| EQUIPMENT FAILURE | 81 | 3 | 18 | 4 |
| INCORRECT OPERATIONS | 48 | 10 | 182 | 28 |
| OTHER CAUSE | 4 | 0 | 4 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 336

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 287

- a. One-Call Notification Practices Not Sufficient: 42
- b. Locating Practices Not Sufficient: 92
- c. Excavation Practices Not Sufficient: 153
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 144695

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 4022

Estimated Number Of Services with EFV In the System At End Of Year: 171630

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 318

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 211754

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL CONSUMPTION FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS) TIMES 100 EQUALS PERCENT UNACCOUNTED FOR.

FOR YEAR ENDING 6/30: 1.8%

PART H - ADDITIONAL INFORMATION

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614)460-6443 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614)460-8417 _____ (Area Code and Facsimile Number) |

Question No. I&E-GS-001
Respondent: R. Kitchell
Page 1 of 3

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-001:

Reference pipeline replacement on page 3 of Columbia Gas Statement No. 14. From 2015 through 2019, please provide a schedule showing the main and service replacement by pipe material (cast iron, wrought iron, bare steel etc.) as follows:

- A. The monthly budgeted pipeline replacement miles and the corresponding estimated replacement costs broken down by:
 - a. Material costs;
 - b. Service costs (planning, labor, permits, engineering costs; etc.); and
 - c. Restoration/improvement costs (street paving, curbing, sidewalks etc.).

- B. The monthly actual pipeline replacement miles and the corresponding actual replacement costs broken down by:
 - a. Material costs;
 - b. Service costs (planning labor, permits, engineering costs, etc.); and
 - c. Restoration/improvement costs (street paving, curbing, sidewalks etc.)

Response:

In reference to pipeline replacement on page 3 of Columbia Gas Statement No. 14, footage represented by year only includes cast iron, wrought iron and bare steel retirements. See I&E-GS-001 Attachment A for all main replacement footage and number of service replacements by pipe material from 2015 through 2019. Please note, budgeted and actuals costs are not available at the pipe material or vintage level.

See Table 1 below for budgeted and actual new and replacement costs for main (Gas Plant Account 376) by year from 2015 through 2019. Please note,

Question No. I&E-GS-001
Respondent: R. Kitchell
Page 2 of 3

Columbia's capital budgets are prepared at a gas plant account and budget class level, but not at the level of detail requested above.

Table 1

| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|---------|----------------|----------------|----------------|----------------|----------------|
| Budget | \$ 116,433,300 | \$ 149,996,781 | \$ 182,182,534 | \$ 160,987,622 | \$ 186,193,196 |
| Actuals | \$ 113,282,273 | \$ 165,446,336 | \$ 179,216,129 | \$ 141,680,947 | \$ 207,665,070 |

Furthermore, see Table 2¹ below for a further breakdown of actual annual costs related to main replacement which includes permits & fees, miscellaneous/other, safety, consulting/outside services, fleet/tools, labor & benefits, materials, paving & restoration, construction overheads and contractor costs.

Table 2

| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|------------------------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|
| CONTRACTOR | \$ 35,882,180 | \$ 46,500,687 | \$ 54,185,456 | \$ 43,585,925 | \$ 78,720,992 |
| CONST. OVERHEADS | \$ 11,673,648 | \$ 13,150,540 | \$ 15,233,853 | \$ 10,783,222 | \$ 15,302,376 |
| PAVING & RESTORATION | \$ 25,695,664 | \$ 31,993,916 | \$ 25,582,181 | \$ 18,351,427 | \$ 24,315,304 |
| MATERIALS | \$ 3,707,756 | \$ 3,970,458 | \$ 4,483,531 | \$ 2,825,550 | \$ 4,344,714 |
| LABOR & BENEFITS | \$ 5,225,852 | \$ 6,513,970 | \$ 6,730,360 | \$ 5,708,546 | \$ 8,576,771 |
| FLEET/TOOLS | \$ 1,252,441 | \$ 1,427,514 | \$ 1,583,496 | \$ 1,226,520 | \$ 1,654,268 |
| CONSULTING/ OUTSIDE SERVICES | \$ 902,406 | \$ 1,865,379 | \$ 2,454,771 | \$ 2,585,786 | \$ 2,410,086 |
| SAFETY | \$ 167,694 | \$ 563,749 | \$ 498,974 | \$ 852,687 | \$ 2,075,511 |
| MISCELLANEO US/OTHER | \$ 3,453,057 | \$ 3,378,099 | \$ 4,112,557 | \$ 2,066,852 | \$ 5,122,046 |
| PERMITS& FEES | \$ 646,065 | \$ 741,793 | \$ 928,360 | \$ 778,813 | \$ 557,675 |
| TOTAL COST | \$ 88,606,765 | \$ 110,106,105 | \$ 115,793,539 | \$ 88,765,328 | \$ 143,079,744 |

¹ Table 2 excludes projects utilizing main greater than 9 inches in diameter and project primarily of steel. This is done to be more reflective of the vast majority of replacement work done by Columbia, and not have some of the much larger projects skew the breakdown.

Main Replacement Footage by Pipe Material

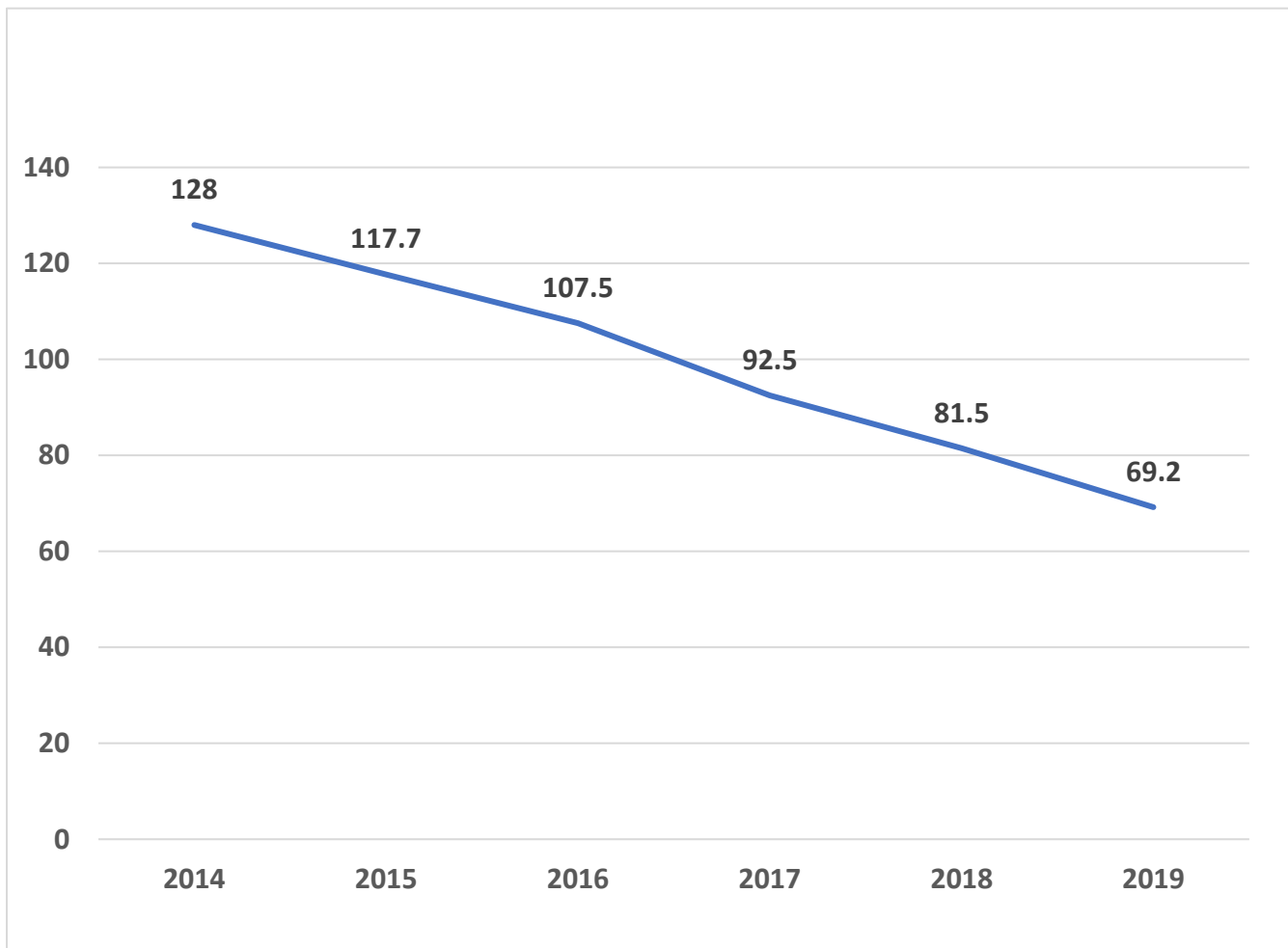
| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|
| Bare Steel | 469,471 | 448,149 | 471,117 | 265,921 | 490,940 |
| Pre 82 Plastic | 48,534 | 51,511 | 68,439 | 29,763 | 47,269 |
| Plastic | 76,331 | 62,072 | 85,846 | 61,840 | 112,901 |
| Pre 71 Coated Steel | 68,880 | 86,796 | 76,154 | 126,050 | 112,128 |
| Pre 55 Coated Steel | 3,828 | 2,377 | 1,459 | 1,707 | 1,137 |
| Coated Steel | 30,811 | 25,629 | 30,236 | 14,391 | 19,977 |
| Other | 5,604 | - | - | 316 | - |
| Plastic Insert | - | - | - | - | - |
| Wrought Iron | 4,602 | - | 13,993 | 4,291 | - |
| Cast Iron | 16,933 | 30,641 | 24,318 | 32,078 | 25,749 |
| Unknown Install Year Coated Steel | 10,165 | 12,986 | 6,285 | 7,003 | 9,755 |
| Unknown Install Year Plastic | 2,536 | 1,517 | 2,799 | 1,880 | 2,549 |
| Grand Total | 737,695 | 721,678 | 780,646 | 545,240 | 822,405 |

Service Lines Replaced by Pipe Material

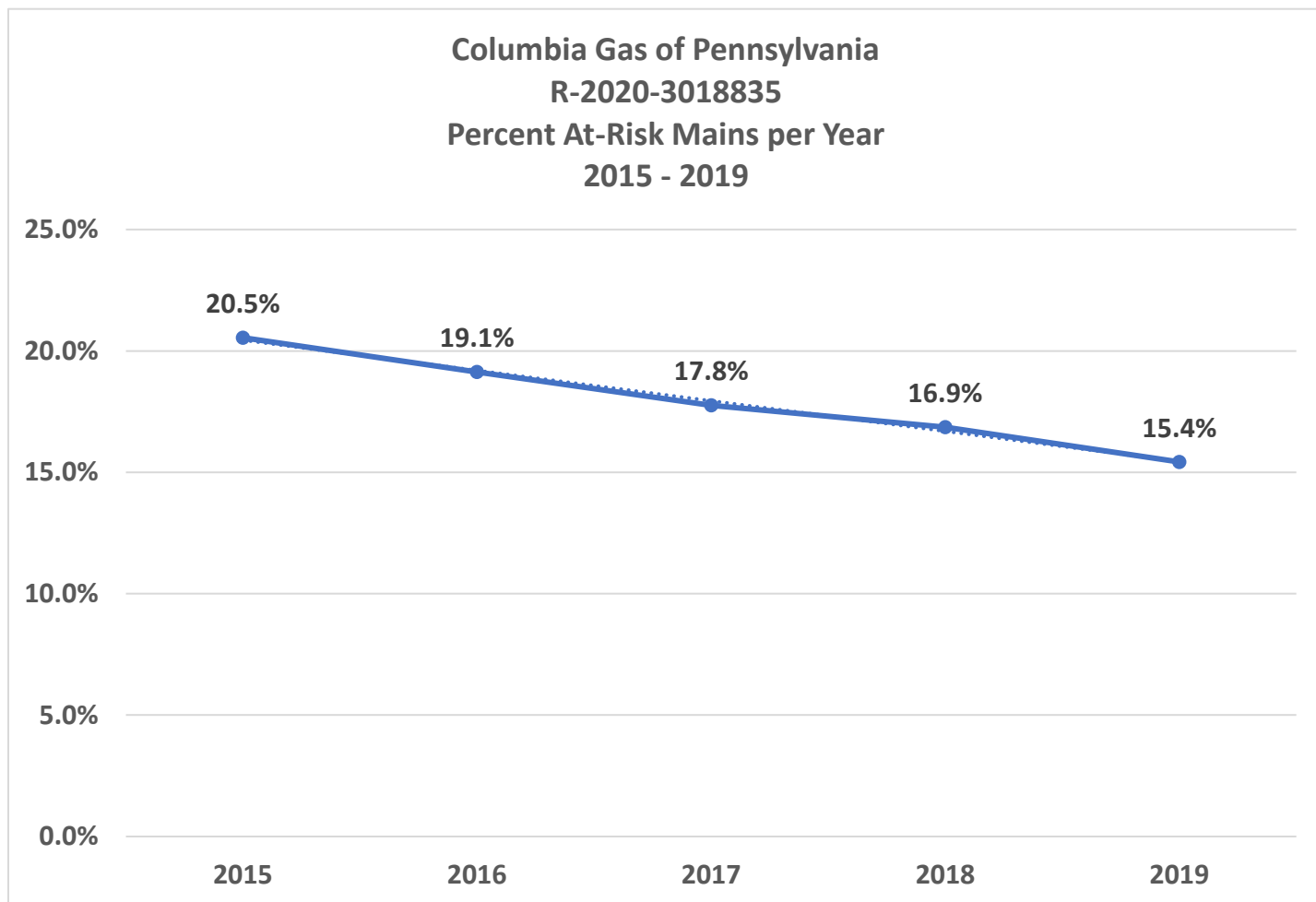
| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|--------------------|--------------|--------------|--------------|--------------|--------------|
| Plastic | 3216 | 3607 | 4316 | 3974 | 4197 |
| Plastic Insert | 962 | 1156 | 1244 | 1327 | 1323 |
| Bare Steel | 2362 | 2749 | 2250 | 2306 | 2230 |
| Coated Steel | 299 | 193 | 238 | 255 | 229 |
| Copper | 0 | 0 | 1 | 3 | 0 |
| Other | 0 | 1 | 2 | 1 | 2 |
| Cast Iron | 0 | 1 | 0 | 0 | 0 |
| Wrought Iron | 0 | 0 | 1 | 0 | 1 |
| Type unavailable | 673 | 813 | 517 | 454 | 547 |
| Grand Total | 7,512 | 8,520 | 8,569 | 8,320 | 8,529 |

Table 2

| Columbia Gas of Pennsylvania R-2020-3018835 Total miles of Cast Iron and Wrought Iron Remaining in PA by Year Data Compiled using Columbia's Annual DOT Reports 2014 - 2019 | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Miles | 128 | 117.7 | 107.5 | 92.5 | 81.5 | 69.2 |



| Columbia Gas of Pennsylvania R-2020-3018835 Total miles of Cast Iron and Wrought Iron Remaining in PA by Year Data Compiled using Columbia's Annual DOT Reports 2015 - 2019 Table 1 | | | | |
|--|---------------------|---------------------------------|----------------------------|-------------------|
| Year | Total Miles of Main | Miles of Cast Iron/Wrought Iron | Miles of Unprotected Steel | % of At-Risk Main |
| 2015 | 7,460.4 | 117.7 | 1415 | 20.5% |
| 2016 | 7,500.5 | 107.5 | 1327.3 | 19.1% |
| 2017 | 7,548.4 | 92.5 | 1248.2 | 17.8% |
| 2018 | 7,622.2 | 81.5 | 1203.4 | 16.9% |
| 2019 | 7,656.4 | 69.2 | 1112 | 15.4% |



Question No. I&E-GS-012
Respondent: M. Davidson
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COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-012:

Reference Distribution Integrity Management Program (DIMP) on page 27 of Columbia Gas Statement No. 7. Provide a schedule depicting the pipeline miles replaced by type, corresponding risk factor reduction, and a comparison of how your DIMP risk total decreased or increased by project for calendar years 2015 through 2019.

Response:

Please see I&E-GS-001 Attachment A showing the footage of main replaced by type.

The replacement of bare steel and cast iron main is one of the leading programs to address risk in the DIMP. Because the DIMP risk model is quantitative and validated by Subject Matter Experts (SME), the risk scores for bare steel and cast iron main are continuously determined to be a high risk by the SME's in order to maintain focus on its replacement. There are several key indicators of risk reduction used by the Company. Those indicators include good, measurable progress on LTIIP, the removal of bare steel and cast iron pipe (more than 436 miles removed from 2015-2019) and the overall reduction in the number of open type-2 leaks.

To assess the replacement of bare steel and cast iron pipe as part of the DIMP plan, the Company uses the Optimain risk model to prioritize the replacement of mainline pipe due to age and condition. Historic Optimain risk scores by capital project are not readily available, as the Company uses Optimain to build necessary replacement projects, not to track scores of completed capital projects. However, the Company does maintain historic Optimain risk scores by total pipe segment by year.

Question No. I&E-GS-012
 Respondent: M. Davidson
 Page 2 of 2

Accordingly, the Optimain risk scores by year, identifying the total risk removed with respect to each year, with the associated footage of main replaced for each year, is shown below in Table 1:

Table 1

| Year | Priority Pipe Main Replaced by Foot (See Table 1 to GS-024) | Optimain-Total Risk Scores by Year | Risk Removed (from prior year's score) | % Reduction from Prior Year's Score |
|------|---|------------------------------------|--|-------------------------------------|
| 2019 | 516,689 | 547,857 | (20,497) | 3.61% |
| 2018 | 302,606 | 568,354 | (3,273) | 0.60% |
| 2017 | 509,428 | 571,627 | 8923 | -1.59%* |
| 2016 | 478,790 | 562,703 | (32,604) | 5.48% |
| 2015 | 496,610 | 595,308 | **n/a | **n/a |

*The increase in risk scores for 2017 can be attributed to improvements made to the Optimain scoring model related to the leak placement process. As a result of this process, the Optimain risk scores were adjusted this year from their original status, thus showing a new base line annual risk score for that year.

**2014 risk score data is not available and so the risk removed and risk reduction % cannot be calculated for 2014 to 2015.

Question No. I&E-GS-002
Respondent: R. Kitchell
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COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-002:

Reference non-PennDOT standard restoration requirements by municipalities on page 12 of Columbia Gas Statement No. 14. For projects involving non-PennDOT standard restoration requirements by municipalities from 2015 through 2019, please provide:

- A. A schedule showing the address of the project, the name of the municipality, the total budgeted cost of the project, the actual cost of the project, the total restoration cost of the project and PennDOT standard restoration cost;
- B. Any action(s) Columbia Gas took regarding the non-PennDOT standard restoration requirement by the municipality including litigations; and
- C. Where in the filing are these amounts reflected?

Response:

- A. Please see I&E-GS-002 Attachment A that shows a report that is utilized to show paving and restoration costs against the total cost of the project for replacement work (Age & Condition – Job Type 557, Betterment – Job Type 559, and Public Improvement – Job Type 561). This is based on the year the project was completed. The Company does not have this by municipality, but the information can be filtered by County and City Codes which are depicted in I&E-GS-002 Attachment B. Please note, Attachment A contains all municipal and PennDOT related projects as the Company is unable to separate the projects due to reporting limitations.

The Company typically follows the municipality's ordinance for restoration, unless the Company deems it unreasonable. At that point, the Company would try and negotiate with the municipality, and may reference the use of a PennDOT standard to see if an agreement could be

Question No. I&E-GS-002
Respondent: R. Kitchell
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- reached. Attachment A does not break out restoration costs specific to a particular PennDOT standard.
- B. To date, Columbia has not litigated any municipal restoration issues, as the need has not arisen. As stated in Columbia statement 14, pages 7-14, the Company has undertaken significant outreach efforts with municipalities to educate them about our pipeline replacement efforts. Over the past five years, Columbia has been successful in negotiating restoration requirements with municipalities. See I&E-GS-002 Attachment C for a list of municipalities where successful negotiation regarding restoration requirements has been achieved.
- C. For the FPFTY, all restoration costs are part of the Company's capital budget.

| Ops Center | Job Order | Project Id | Project Name | Job Type | Job Summary | Address | County | City | Year | Tot Est Cost | Tot Act Cost | Act Pave & Rest |
|------------|-------------|------------|--|----------|-----------------------------------|---------------------------|--------|------|------|----------------|----------------|-----------------|
| PA SOUTH | 08023852801 | 0888900 | LOWER TYRONE TOWNSHIP REPLACEMENT PROJ | 557 | INSTALL 4,200'-6"PMP | D- 8542 | 051 | DAW | 2015 | \$359,270.21 | \$280,298.98 | |
| PA CENTRAL | 10023975401 | 1102389 | HILLSCHOOL HOUSE REGULATOR REPLACEMENT | 559 | LAY 40'-2"PMP | HILLS SCHOOL HOUSE RD | 059 | WAY | 2015 | \$48,903.97 | \$77,980.65 | \$0.00 |
| PA SOUTH | 11023102000 | 1100552 | 2321 - BEN LOMOND - REPL JO | 557 | INSTALL 1,898'-4"P | BEN LOMOND ST | 051 | UNI | 2016 | \$275,592.50 | \$279,811.72 | \$144,313.61 |
| PA CENTRAL | 11023139000 | 1103123 | ARNOLD ST BARE PIPE | 559 | INSTALL 215'-2" PMMP | ARNOLD ST | 125 | WAS | 2016 | \$25,446.20 | \$71,669.36 | \$1,521.79 |
| PA SOUTH | 11023139701 | 1103157 | 2321 - CRAFTMORE - REPL JO | 557 | INS 5665'-8" 2" PMMP | CRAFTMORE RD | 051 | BRO | 2018 | \$835,927.59 | \$1,122,619.97 | \$102,476.52 |
| PA EAST | 11024979102 | 1105821 | 2421 - SYCAMORE - REPL JO | 557 | INST 3085'6" & 1205'2" PMMP-OPNS | SYCAMORE | 133 | DOV | 2015 | \$516,495.49 | \$542,070.64 | \$299,443.90 |
| PA EAST | 12021263700 | 1206048 | LINDEN AVENUE REPLACEMENT PROJECT | 557 | INSTALL 1500' - 4" PMMP | LINDEN AV | 055 | MER | 2015 | \$146,845.64 | \$142,880.83 | \$84,398.15 |
| PA EAST | 12021273900 | 1208260 | DYMOND/MOUNT VIEW | 557 | INST 1550' - 2" PMLP | DYMOND/MOUNT VIEW AV | 055 | FAY | 2016 | \$142,917.02 | \$196,787.76 | \$91,737.19 |
| PA NORTH | 12022418100 | 1210950 | D-5242 CLINTONVILLE REPLACEMENT PROJEC | 557 | INSTALL 4700' OF 4" PMP | SR 308 | 121 | CLI | 2015 | \$540,625.45 | \$537,620.26 | \$0.00 |
| PA NORTH | 12022434600 | 1211851 | HIGH ST REPLACEMENT PROJECT | 557 | INSTALL 2760'-2" PMP | HIGH ST | 083 | BRA | 2015 | \$189,890.23 | \$128,293.92 | \$15,995.23 |
| PA NORTH | 12022451100 | 1212754 | S KENDALL AVENUE REPLACEMENT PROJECT | 557 | 840'-4", 260'-2"PMP, UPRT412' | S KENDALL | 083 | BRA | 2015 | \$243,422.90 | \$312,122.14 | \$196,590.31 |
| PA CENTRAL | 12023217301 | 1212302 | CPG LINE 36 ABANDONMENT PROJECT | 561 | INSTALL 7,313'-6/2"PMP | CHRISTY RD | 125 | STR | 2016 | \$576,331.32 | \$579,000.65 | \$13,973.47 |
| PA EAST | 12024113600 | 1209266 | 2421 - STRATHCONA - REPL JO | 557 | INST 2,620' - 2" PMMP | STRATHCONA | 133 | YOR | 2015 | \$147,572.94 | \$148,647.41 | \$22,448.86 |
| PA EAST | 12024115700 | 1209579 | 2421 - QUEEN - REPL JO | 557 | INST 650' OF PMMP | E QUEEN ST | 133 | DAL | 2015 | \$53,208.99 | \$71,993.66 | \$54,698.18 |
| PA EAST | 12024122701 | 1210794 | BALTIMORE ST-GET CI | 557 | INSTALL 521'-6"P | BALTIMORE ST | 001 | GET | 2016 | \$178,764.62 | \$256,608.14 | \$200,277.35 |
| PA EAST | 12024123500 | 1210828 | E MIDDLE ST - AOP CI PROJECT | 557 | INST 2075'-2" PMMP & 670'-8" PMMP | E MIDDLE ST | 001 | GET | 2015 | \$496,739.91 | \$779,099.66 | \$651,948.36 |
| PA EAST | 12024129601 | 1533946 | MANOR ST | 557 | INST 3,446' - 4" & 2" PMMP | KURTZ AV | 133 | YOR | 2016 | \$844,486.56 | \$720,973.25 | \$788,694.02 |
| PA EAST | 12024140202 | 1534163 | ELM ST PH II | 557 | INST 6,162' - 4" & 2" PMMP | LANCASTER AV | 133 | YOR | 2016 | \$804,421.56 | \$1,224,243.42 | \$1,096,686.99 |
| PA EAST | 12024142501 | 1212704 | 2421 - FOX RUN - REPL JO | 557 | INST 265'-2" PMMP | FOX RUN | 133 | DOV | 2017 | \$24,396.31 | \$32,458.06 | \$3,280.86 |
| PA EAST | 12024981400 | 1206297 | 2451 - PARK FOREST - REPL JO | 557 | INST 4,200' - 2" & 4" PMMP | PARK FOREST AV | 027 | STA | 2015 | \$211,840.95 | \$334,654.97 | \$163,340.06 |
| PA EAST | 12024981600 | 1206298 | 2451 - WILTSHIRE - REPL JO | 557 | INST 4,300' - 2" PMMP | WILTSHIRE | 027 | STA | 2016 | \$206,460.40 | \$237,753.02 | \$43,762.39 |
| PA EAST | 12024996100 | 1207880 | FAIRMOUNT AVENUE REPLACEMENT PROJECT | 557 | REPLACE MAIN - LEAKAGE | E FAIRMOUNT AV | 027 | STA | 2016 | \$103,898.09 | \$254,577.90 | \$196,947.69 |
| PA EAST | 12024998201 | 1207992 | CODORUS FURNACE RD REPLACEMENT PROJECT | 557 | INST 10880' 4" & 1660' 2" PMMP | CODORUS FURNACE RD | 133 | YOR | 2016 | \$1,726,075.73 | \$1,490,045.09 | \$385,826.90 |
| PA EAST | 13021302600 | 1316812 | FRANKLIN STREET REPLACEMENT PROJECT | 557 | INST 2595'-2" PMMP, 785'-4" PMLP | FRANKLIN ST | 055 | GRE | 2015 | \$387,197.57 | \$685,599.31 | \$408,466.98 |
| PA EAST | 13021303200 | 1316864 | 2171 - SEMINARY - REPL JO | 557 | INST 1994'-2" PMMP & 5'-4" PMMP | W SEMINARY ST | 055 | MER | 2015 | \$249,977.77 | \$304,356.50 | \$106,860.34 |
| PA EAST | 13021311400 | 1318193 | FRANKLIN COUNTY NURSING HOME | 559 | INST 1250'-4" PMMP | FRANKLIN FARM LN | 055 | CHA | 2015 | \$100,558.01 | \$267,927.42 | \$12,754.97 |
| PA NORTH | 13022462600 | 1313532 | SR 66 REPLACEMENT PROJECT | 557 | INSTALL 1400' OF 2" & 6" PMP | SR 66 | 031 | NW- | 2015 | \$251,145.40 | \$189,217.62 | \$3,132.12 |
| PA NORTH | 13022469200 | 1313791 | 2231 - FRANKLIN - REPL JO | 557 | LAY 400'-2"PMP | FRANKLIN AV | 073 | N-C | 2016 | \$43,194.03 | \$29,280.04 | \$1,632.48 |
| PA NORTH | 13022491702 | 1314766 | OAK RD REPLACEMENT PROJECT | 557 | LAY 1520'-2" PMMP | OAK RD | 003 | BRA | 2015 | \$194,031.51 | \$116,975.08 | \$32,181.61 |
| PA NORTH | 13022491900 | 1314767 | FOREST ROAD REPLACEMENT PROJECT | 557 | INSTALL 1600'-2" PMP | FOREST RD | 003 | BRA | 2015 | \$161,919.67 | \$127,384.20 | \$28,926.71 |
| PA NORTH | 13022492100 | 1314768 | GATEWAY AVENUE REPLACEMENT PROJECT | 557 | LAY 560'-4"P & 440'-2"P | GATEWAY AV | 003 | WEX | 2015 | \$98,487.78 | \$74,925.58 | \$20,158.50 |
| PA NORTH | 13022492300 | 1314769 | D-272 FROM BRANCH RD & EDGEWATER DR | 557 | INSTALL 1800'-8" HDPE | D-272 | 007 | MON | 2015 | \$384,246.67 | \$466,379.94 | \$0.00 |
| PA NORTH | 13022493200 | 1314792 | THIRD STREET REPLACEMENT PROJECT | 557 | INSTALL 5102'-4"P/1895'-6"P | 3RD | 007 | KOP | 2015 | \$1,022,800.50 | \$1,290,539.97 | \$665,327.15 |
| PA NORTH | 13022496401 | 1314911 | SCAIFE ROAD REPLACEMENT PROJECT | 557 | 1900'-6" 5020'4" 5600'-2" PMP | SCAIFE RD | 003 | SEW | 2016 | \$1,690,714.40 | \$1,537,404.48 | \$628,093.55 |
| PA NORTH | 13022498100 | 1315007 | FALLS AVE REPLACEMENT PROJECT | 557 | LAY 2430'-4" PIP & 512'-2" PIP | FALLS AV | 073 | N-C | 2016 | \$168,475.11 | \$213,827.29 | \$39,113.42 |
| PA NORTH | 13022500300 | 1315147 | SEWICKLEY REPLACEMENT PROJECT, PHASE 2 | 557 | LAY 10000'-4" & 3500'-2" PMP | CHADWICK | 003 | SEW | 2015 | \$2,194,377.23 | \$1,809,875.45 | \$1,308,330.74 |
| PA NORTH | 13022508502 | 1315730 | HIGHLAND AVE REPLACEMENT PROJECT | 557 | INSTALL 2936' 4" PMP | HIGHLAND AV | 007 | AMB | 2015 | \$370,448.42 | \$375,211.25 | \$15,667.54 |
| PA NORTH | 13022508902 | 1315736 | FURNACE STREET REPLACEMENT | 557 | LAY 1700'-10"WTHP/ 1000'-2"PMP | FURNACE ST | 073 | N-C | 2016 | \$655,282.73 | \$844,065.76 | \$8,546.80 |
| PA NORTH | 13022509301 | 1315743 | SR 208 @ RON MCHENRY REPLACEMENT | 557 | INSTALL 1500' 4" PMP | RON MCHENRY ROAD | 031 | KNO | 2015 | \$134,596.05 | \$72,100.57 | |
| PA NORTH | 13022510100 | 1315751 | 2231 - PINE ACRE - REPL JO | 557 | INSTALL 1282'- 2" PMP | PINE ACRE LN | 003 | COR | 2015 | \$288,230.22 | \$118,404.17 | \$12,457.76 |
| PA NORTH | 13022510501 | 1315755 | LIMERICK RD REPLACEMENT PROJECT | 557 | LAY 1470'-4" PMMP | LIMERICK RD | 003 | WEX | 2015 | \$256,110.23 | \$109,291.26 | \$30,487.95 |
| PA NORTH | 13022511001 | 1315759 | MCINTOSH DR BETWEEN CHAPLIN DR | 557 | LAY 1160-2 PMP, 190'-4"PMP | MCINTOSH DR | 003 | COR | 2015 | \$303,176.51 | \$104,085.98 | \$7,745.03 |
| PA NORTH | 13022511601 | 1315767 | CAMP HORNE RD OFF OF RT 65 | 557 | INSTALL 2100'-4"/200'-2"PMP | CAMP HORNE RD | 003 | PIT | 2017 | \$337,364.56 | \$262,819.25 | \$183,883.10 |
| PA NORTH | 13022511800 | 1315769 | MERRIMAN RD BTWN DEER RUN & FERRY | 557 | LAY -1720'-6" PMP | MERRIMAN RD | 003 | SEW | 2015 | \$272,158.46 | \$286,052.43 | \$52,879.46 |
| PA NORTH | 13022512200 | 1315782 | RHODES PLACE REPLACEMENT & UPDATE | 557 | LAY 1300'-4"PMP & UPDATE | RHODES PL | 073 | N-C | 2016 | \$252,705.57 | \$331,749.93 | \$207,226.21 |
| PA NORTH | 13022518000 | 1315959 | SR 308 NEAR MAHOOD RD REPLACEMENT | 557 | INSTALL 2100' OF 4" PMP | 308 | 019 | W-S | 2016 | \$161,143.66 | \$123,475.63 | |
| PA NORTH | 13022521401 | 1316049 | 2239 - FOURTH AND UNION ST REPLACEMENT | 557 | 340'-2, 3200'-4, 320'-6, 60'-8 | 4TH AV | 123 | WAR | 2018 | \$328,354.43 | \$532,267.37 | \$165,275.27 |
| PA NORTH | 13022524200 | 1316143 | DERRICK RD AREA REPLACEMENT PROJECT | 557 | INST 1870' 4"PMP & 3072' 2"PMP | DERRICK | 083 | BRA | 2016 | \$320,794.04 | \$388,380.73 | \$86,306.11 |
| PA NORTH | 13022525601 | 1316173 | 2239-D-4227 BUENAVISTA DR AREA AMRP | 557 | INST 8000'-8"HDPE, 3000'2"PMP | D-4227 | 123 | WAR | 2015 | \$1,830,780.52 | \$1,400,573.56 | \$661,541.72 |
| PA NORTH | 13022526400 | 1316206 | NORWOOD AVENUE REPLACEMENT PROJECT | 557 | LAY 2040'-6" 200'-4" PL | NORWOOD AV | 003 | PIT | 2015 | \$428,690.74 | \$283,664.23 | \$81,650.87 |
| PA NORTH | 13022526900 | 1316225 | AVALON PARK BETTERMENT D-213 | 559 | BORE 1300'-6" PMP | UNION AV | 003 | PIT | 2015 | \$554,392.16 | \$558,494.88 | \$905.52 |
| PA CENTRAL | 13022535200 | 1316750 | ORCHARD REPLACEMENT PROJECT | 557 | 2845'-8"/6895'-4"/800'-2"PMP | ORCHARD DR | 003 | PIT | 2015 | \$2,274,177.05 | \$2,568,578.71 | \$1,537,442.50 |
| PA CENTRAL | 13022535800 | 1316762 | TROPICAL REPLACEMENT PROJECT | 557 | INSTALL 8126'-2", 4", 6" PMMP | TROPICAL | 003 | PIT | 2019 | \$2,045,628.63 | \$3,414,633.37 | \$1,305,166.21 |
| PA CENTRAL | 13022537100 | 1316779 | PLEASANT HILLS REPLACEMENT PROJECT | 557 | 1270'-4", 7435'-2" & 2342'-6"PMP | NATIONAL DELANO, CARYL DR | 003 | PIT | 2015 | \$1,781,103.82 | \$1,525,432.13 | \$554,531.57 |
| PA NORTH | 13022538700 | 1316820 | 2231 - JOHNSON - REPL JO | 557 | LAY 3027' 4 AND 6" PM MP | JOHNSON AV | 007 | BAD | 2015 | \$457,678.38 | \$612,687.88 | \$499,277.25 |
| PA NORTH | 13022538900 | 1316822 | ROOSEVELT RD & BRADSHAW DR REPLACEMENT | 557 | LAY 1835' 4" 1044' 2" PMMP | ROOSEVELT RD | 003 | PIT | 2015 | \$352,838.21 | \$262,906.39 | \$23,524.83 |
| PA NORTH | 13022539100 | 1316829 | (N-C) COURT @RAY ST AC-DATE 6-21-15 | 557 | 600'-2"PMLP/150'-4"PMLP(ACORR) | COURT ST | 073 | N-C | 2015 | \$117,166.02 | \$216,304.52 | \$108,080.78 |

I&E Exhibit No. 4
 Schedule No. 7
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| | | | | | | | | | | | | |
|------------|-------------|---------|--|-----|---------------------------------|-----------------------|-----|-----|------|----------------|----------------|----------------|
| PA CENTRAL | 13022542000 | 1317056 | 2221 - MCLAIN - REPL JO | 557 | INST 440'-4" PLP MAIN | MCLAIN | 003 | PIT | 2015 | \$105,028.84 | \$194,017.16 | \$117,575.80 |
| PA CENTRAL | 13022542201 | 1317060 | STOWE AVE. REPLACEMENT PROJECT | 557 | INSTALL 630'-4" & 525'-2" PMLP | STOWE | 003 | MCK | 2015 | \$236,708.64 | \$168,494.42 | \$126,876.06 |
| PA CENTRAL | 13022542600 | 1317065 | BELL AVE - REPLACEMENT PROJECT | 557 | INST 2750'- 2'-4'-6" PMP | BELL | 003 | MCK | 2015 | \$642,379.57 | \$587,376.57 | \$426,884.23 |
| PA CENTRAL | 13022542800 | 1317068 | SOUTH SIDE | 557 | REPL 4755'-2'&4" PMMP MAIN | SOUTH SIDE PHASE 1 | 003 | PIT | 2015 | \$1,213,809.79 | \$1,634,598.32 | \$1,161,369.39 |
| PA NORTH | 13022552300 | 1317720 | LARRY STREET REPLACEMENT PROJECT | 557 | INSTALL 2834'-2" & 4668'-4" PE | LARRY ST | 007 | ALI | 2015 | \$1,197,102.68 | \$1,081,131.26 | \$920,022.80 |
| PA NORTH | 13022554101 | 1317865 | D-22 BETWEEN SR 308 AND GOFF RD | 557 | REPL 4160'-8" & 2010'-2" HDPE | D-22 | 019 | BOY | 2015 | \$1,023,023.03 | \$1,079,669.18 | |
| PA NORTH | 13022555501 | 1317940 | 7TH AVE REPLACEMENT PROJECT N-B | 557 | LAY 2825' - 8', 4" & 2" PMP | 7TH AV | 007 | N-B | 2015 | \$834,293.66 | \$1,012,226.69 | \$23,240.30 |
| PA NORTH | 13022555700 | 1317941 | 2231 - AMSLER - REPL JO | 557 | LAY 820'-4" PMP REPLACEMENT | AMSLER RD | 007 | SEW | 2015 | \$109,408.78 | \$81,282.20 | \$5,526.72 |
| PA NORTH | 13022555900 | 1317942 | D-81 ROW, WEXFORD RD, TIERRA VISTA DR | 557 | LAY 2300'-6" & 1520'-2" PMP | D-81 | 003 | GIB | 2015 | \$340,129.35 | \$338,429.24 | \$5,049.88 |
| PA NORTH | 13022556100 | 1317944 | 2231 - WINTERBURN - REPL JO | 557 | INSTALL 750' - 4" P | WINTERBURN RD | 007 | BVR | 2015 | \$62,360.84 | \$57,125.16 | \$634.20 |
| PA NORTH | 13022557200 | 1318009 | PEARSON ST BETWEEN FAIRVIEW & TAYLOR | 557 | LAY 550'-4" PMP & 800'-2" PMP | PEARSON | 073 | N-C | 2015 | \$199,050.33 | \$235,380.62 | \$139,831.87 |
| PA NORTH | 13022557402 | 1318010 | MONTGOMERY REPLACEMENT PROJECT | 557 | LAY 975'-6", 575'-4", 600'-2" P | MONTGOMERY | 073 | N-C | 2015 | \$250,521.62 | \$216,813.85 | \$67,946.77 |
| PA CENTRAL | 13022566200 | 1318829 | PARKFIELD REPLACEMENT PROJECT | 557 | INST 2776'-4"&8" PMMP MAIN | PARKFIELD | 003 | PIT | 2015 | \$533,995.91 | \$908,434.97 | \$784,236.49 |
| PA CENTRAL | 13022566401 | 1318834 | MITCHELL AVE. REPLACEMENT | 557 | INSTALL 1390' PMLP - LEAKAGE | MITCHELL | 003 | CLA | 2015 | \$533,152.92 | \$475,703.59 | \$265,687.21 |
| PA CENTRAL | 13022566600 | 1318835 | MANSFIELD AVE REPLACEMENT PROJECT | 557 | INST 1650'-4"LP& 400'-2"HDPEHP | MANSFIELD AV | 003 | PIT | 2015 | \$645,330.85 | \$389,360.14 | \$207,940.25 |
| PA NORTH | 13022573201 | 1319205 | CHIPPEWA DR. SR588 TO TURNPIKE AVE | 557 | LAY 720'-4" P | CHIPPEWA DR | 007 | BVR | 2017 | \$98,358.96 | \$142,433.16 | \$81,726.21 |
| PA NORTH | 13022575000 | 1319255 | 2231 - HIGH STREET OFF OF CHAPEL RD | 557 | INSTALL 2720' OF 2" PIP | HIGH ST | 007 | MON | 2015 | \$252,073.37 | \$194,432.04 | \$126,822.47 |
| PA NORTH | 13022575401 | 1319257 | 2231 11TH AVE FROM 7TH ST TO ALLEGHENY | 557 | INSTALL 1320' OF 4" PMP | 11TH AV | 007 | N-B | 2015 | \$389,825.89 | \$408,706.62 | \$372,498.91 |
| PA NORTH | 13022575700 | 1319259 | MCMILLEN AV - REPLACEMENT JOB | 557 | LAY 2000'-2" PIP MCMILLEN AV | MCMILLEN AV | 007 | BVR | 2015 | \$145,471.70 | \$297,607.07 | \$51,062.30 |
| PA NORTH | 13022575901 | 1319260 | CAMP MEETING EXD, YOUNG, CAMP MEETING | 557 | LAY 840'-4" & 1760'-2" PMP | CAMP MEETING RD | 003 | SEW | 2015 | \$224,701.74 | \$254,599.38 | \$79,233.77 |
| PA NORTH | 13022578001 | 1319368 | 2231 - LONGVUE - REPL JO | 557 | LAY 80'-2" PMP | 975 LONGVUE DR | 007 | ELL | 2015 | \$47,163.09 | \$52,375.45 | \$6,933.78 |
| PA NORTH | 13022586200 | 1319837 | R-3557 CRITICAL VALVE INSTALL | 559 | INSTALL CP 7321 6" POLYVALVE | OHIO RIVER | 003 | LEE | 2015 | \$59,110.54 | \$86,507.23 | \$6,669.00 |
| PA NORTH | 13022586801 | 1319858 | D-80 BETWEEN SR 108 AND MILLER ROAD | 557 | 4400'-4" PM MP,300'-2" PM MP | D-80 | 019 | SLI | 2017 | \$722,325.64 | \$562,324.84 | \$0.00 |
| PA NORTH | 13022590301 | 1320134 | HARRISON ST REPLACEMENT PROJECT | 557 | LAY 870' - 4" PMP | HARRISON | 073 | N-C | 2016 | \$243,516.88 | \$236,850.12 | \$103,776.72 |
| PA NORTH | 13022591400 | 1320217 | BLUE JAY PORTERSVILLE RD | 557 | 1325'2"/1850'-4" PMLP/BLUE JAY | BLUE JAY | 073 | ELL | 2016 | \$335,987.94 | \$303,826.82 | \$119,953.85 |
| PA NORTH | 13022591600 | 1098897 | CRITICAL VALVE INITIATIVE | 559 | INSTALL CP-7269(RAY ST) | RAY ST | 073 | N-C | 2016 | \$15,128.63 | \$8,847.98 | \$803.90 |
| PA CENTRAL | 13022592000 | 1320223 | SYLVANIA REPLACEMENT PROJECT | 557 | INSTALL 10,000'- 2'&4" PMP | SYLVANIA AMRP | 003 | PIT | 2016 | \$2,149,139.69 | \$2,689,366.18 | \$1,215,829.36 |
| PA CENTRAL | 13022592200 | 1320226 | WYLIE AVENUE REPLACEMENT PROJECT | 557 | INSTALL 2765' PMLP - LEAKAGE | WYLIE | 003 | CLA | 2015 | \$652,376.84 | \$823,416.10 | \$661,350.89 |
| PA CENTRAL | 13022592400 | 1320228 | BEVERLY & PARKER MAINLINE REPLACEMENT | 557 | INSTALL 1285' PMLP - LEAKAGE | BEVERLY | 003 | PIT | 2015 | \$282,403.94 | \$354,616.55 | \$120,237.92 |
| PA CENTRAL | 13022592800 | 1320231 | HAMILTON ROAD REPLACEMENT PROJECT | 557 | INSTALL 1043 FT-6" PLP | HAMILTON | 003 | PIT | 2015 | \$283,800.07 | \$277,192.52 | \$80,970.46 |
| PA SOUTH | 13023241500 | 1315319 | SHEETZ RELOCATION D-8500 | 561 | INSTALL 825'-10"CS-HP | D- 8500 | 051 | UNI | 2015 | \$311,433.94 | \$262,575.47 | |
| PA SOUTH | 13023248201 | 1315904 | PIPELINE D-7169 REPLACEMENT PROJECT | 557 | INST 3500' - 6" PMP | 7169 | 051 | GRI | 2015 | \$323,796.65 | \$343,753.09 | |
| PA SOUTH | 13023248402 | 1315906 | 2321 - LICHTY FARM HILL D1254 - REPL J | 557 | INST 47258'PHHP LICHTY FM NTH | LICHTY FARM NTH D1254 | 111 | BER | 2015 | \$629,286.83 | \$607,601.45 | |
| PA SOUTH | 13023248700 | 1315939 | SOMERSET NORTH | 557 | INSTALL 6,393' - 2" & 4" PMMP | FAIRVIEW | 111 | SOM | 2016 | \$961,570.67 | \$929,255.70 | \$160,681.62 |
| PA SOUTH | 13023250700 | 1316171 | 2321 - D-1254 - LICHTY FARM SOUTH | 557 | INS 38268' PHHP LICHTY FM STH | D-1254 LICHTY FM STH | 111 | BER | 2015 | \$376,848.37 | \$335,849.34 | |
| PA SOUTH | 13023251201 | 1316179 | 2321 - D-1254 - REPL JO | 557 | INSTALL 5127' 8" PHHP | D-1254 | 111 | MEY | 2017 | \$1,024,999.80 | \$1,079,335.63 | |
| PA CENTRAL | 13023254600 | 1316286 | D-4 (MILLERS RUN RD REPLACEMENT PROJ) | 557 | 3600'-8"PMMP,278'-2"PMMP | D-4 | 125 | HIC | 2017 | \$447,249.11 | \$710,677.89 | \$122,187.64 |
| PA CENTRAL | 13023255200 | 1316289 | HARGUS CREEK REPLACEMENT PROJECT | 557 | INS 3600'-2"PLP | HARGUS CREEK RD | 059 | WAY | 2015 | \$476,514.16 | \$348,235.92 | \$0.00 |
| PA SOUTH | 13023256201 | 1316312 | PENNSYLVANIA AVE REPLACEMENT PROJECT | 557 | INSTALL 3,000' - 8" P-HP | PENNSYLVANIA | 129 | N H | 2015 | \$725,913.65 | \$756,822.56 | \$28,660.76 |
| PA SOUTH | 13023257300 | 1316351 | 2321 - D-7007 - REPL JO | 557 | INSTALL 2,997' - 8" PHHP | D-7007 | 129 | HER | 2016 | \$604,118.68 | \$643,784.38 | \$18,722.36 |
| PA SOUTH | 13023258100 | 1316378 | 2321 - GRANDVIEW - REPL JO | 557 | INST 1750'-8" PMP,610'-8" PLP | GRANDVIEW AV | 051 | CON | 2015 | \$509,937.90 | \$619,560.70 | \$284,356.90 |
| PA CENTRAL | 13023262600 | 1316593 | LATIMER AVENUE REPLACEMENT | 557 | 2372'-6",570'-4",5347'-2"PMMP | LATIMER AV | 125 | STR | 2019 | \$1,581,064.93 | \$2,238,558.87 | \$620,135.41 |
| PA CENTRAL | 13023263001 | 1316600 | ELM STREET REPLACEMENT PROJECT | 557 | INSTALL 9,291'-2/4/6" PMMP | ELM ST | 125 | CAN | 2015 | \$1,251,323.51 | \$1,392,875.28 | \$512,602.36 |
| PA CENTRAL | 13023263600 | 1316607 | D-36 (FOREST LAWN) REPLACEMENT PROJECT | 557 | INSTALL 9,220'-2/4/6" PMMP | D-36 | 125 | MCM | 2019 | \$1,684,781.96 | \$2,565,628.64 | \$296,315.54 |
| PA CENTRAL | 13023263800 | 1316612 | WADE AVENUE REPLACEMENT PROJECT | 557 | LAY 8432'-2",2300'-6",730'-8" P | WADE AV | 125 | WAS | 2016 | \$1,910,037.88 | \$2,176,393.54 | \$1,069,501.43 |
| PA SOUTH | 13023264000 | 1316622 | 2321 - CAGY SCHOOL - REPL JO | 557 | INST 1610'-4" PMP, 2600'-2" PMP | CAGY SCHOOL RD | 051 | PT | 2016 | \$353,376.35 | \$298,842.80 | \$3,272.49 |
| PA SOUTH | 13023264201 | 1316652 | 2321 - 7095 - REPL JO | 557 | INST 2900'-8" PM-MP | D- 7095 | 059 | CAR | 2016 | \$434,570.82 | \$390,765.20 | |
| PA CENTRAL | 13023268101 | 1316840 | RIDGE AVENUE REPLACEMENT PROJECT | 557 | INSTALL 5840'-4",6" PMMP | RIDGE AV | 125 | CAN | 2017 | \$1,108,666.92 | \$1,109,792.68 | \$693,193.16 |
| PA CENTRAL | 13023268501 | 1316844 | CANONSBURG PHASE II | 557 | INSTALL 7,330'-2/4/6" PMMP | BLUFF ST | 125 | CAN | 2017 | \$1,149,384.18 | \$1,058,341.65 | \$497,270.50 |
| PA CENTRAL | 13023269800 | 1316932 | BROAD STREET REPLACEMENT PROJECT | 557 | LAY 26,620' 2",4",6",8" PMP | BROAD ST | 125 | WAS | 2015 | \$2,942,947.17 | \$3,476,002.04 | \$2,317,431.47 |
| PA CENTRAL | 13023270400 | 1316959 | WYLIE AV REPLACEMENT PROJECT | 557 | LAY 12030'-2" PMP/1025'-8" PMP | WYLIE | 125 | WAS | 2015 | \$1,863,672.04 | \$1,947,802.62 | \$669,094.89 |
| PA CENTRAL | 13023275600 | 1317451 | DEERFIELD ROAD REPLACEMENT PROJECT | 557 | INSTALL 5353'-2" PMP | D-584 | 125 | WAS | 2015 | \$507,505.68 | \$339,503.44 | \$40,124.60 |
| PA SOUTH | 13023279700 | 1317655 | BROADWAY REPLACEMENT PROJECT | 557 | INSTAL 774' 4" 119 2" PMP | BROADWAY | 111 | BER | 2015 | \$142,482.47 | \$305,900.45 | \$134,119.00 |
| PA SOUTH | 13023279901 | 1317657 | BROADWAY REPLACEMENT PROJECT | 557 | INSTALL 8"1120,320"4" 537"2" P | BROADWAY | 111 | MEY | 2015 | \$213,486.08 | \$222,334.56 | \$78,106.59 |
| PA SOUTH | 13023285002 | 1318240 | SR 88 REPLACEMENT PROJECT | 557 | BORE 500'-2" PMMP | R88 | 125 | MIL | 2015 | \$102,989.60 | \$117,879.10 | \$2,112.00 |
| PA SOUTH | 13023297300 | 1319351 | 2321 - ASH - REPL JO | 557 | INSTALL 3,585'- 2" & 4" MP | ASH ST | 129 | JEA | 2015 | \$490,925.42 | \$462,746.88 | \$282,675.58 |
| PA EAST | 13024154200 | 1209745 | W MASON AVENUE REPLACEMENT PROJECT | 557 | INST 1665'4"&1990'2" PMMP | W MASON | 133 | YOR | 2015 | \$451,576.09 | \$870,147.89 | \$764,684.23 |
| PA EAST | 13024171900 | 1315093 | 2451 - SPARROW - REPL JO | 557 | INST 469' - 2" PMMP | SPARROW AL | 027 | STA | 2015 | \$27,316.88 | \$16,281.56 | \$0.00 |

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| PA EAST | 13024172501 | 1315133 | 2451 - UNIVERSITY - REPL JO | 557 | INST 2086' OF 2" PMMP | UNIVERSITY DR | 027 | STA | 2015 | \$231,096.34 | \$390,183.16 | \$290,109.55 |
| PA EAST | 13024172701 | 1315136 | YORK FAIRGROUNDS | 557 | INST 3431' 2" PMMP | PHILADELPHIA | 133 | YOR | 2016 | \$572,546.32 | \$567,044.22 | \$553,568.37 |
| PA EAST | 13024176400 | 1314901 | 2421 - SUNSET - REPL JO | 559 | INST 300'-2" PMMP | LINDEN AV | 133 | SHR | 2015 | \$61,586.36 | \$61,183.97 | \$20,891.24 |
| PA EAST | 13024183301 | 1211380 | EASTERN GETTYSBURG PROJECT | 557 | INST 2455'-8"PMMP&2431'-2"PMMP | HANOVER ST | 001 | GET | 2015 | \$1,204,478.05 | \$1,424,081.53 | \$389,569.21 |
| PA EAST | 13024185200 | 1316329 | 2421 - BAER - REPL JO | 557 | INSTALL 3070'-2" PMMP | BAER AV | 133 | HAN | 2018 | \$509,483.30 | \$777,159.40 | \$616,658.10 |
| PA EAST | 13024188001 | 1316531 | 2421 - BRADFORD - REPL JO | 557 | INST 1145'-2" PMMP | BRADFORD DR | 133 | YOR | 2019 | \$133,045.30 | \$177,247.87 | \$77,577.69 |
| PA EAST | 13024189901 | 1316851 | SUSQUEHANNA TRAIL NORTH BETTERMENT | 559 | AOP INST 2090'6"&895' 2" PMMP | SR 2095 | 133 | YOR | 2015 | \$671,239.08 | \$750,553.56 | \$216,945.74 |
| PA EAST | 13024194600 | 1317236 | KINGS MILL ROAD REPLACEMENT PROJECT | 557 | REPLACE MAIN - LEAKAGE | KINGS MILL RD | 133 | YOR | 2015 | \$726,779.08 | \$427,268.07 | \$163,979.03 |
| PA EAST | 13024195500 | 1317328 | PAUL STREET REPLACEMENT PROJECT | 557 | INST 4270'-2" PMMP | PAUL ST | 133 | HAN | 2015 | \$517,131.71 | \$329,674.26 | \$129,453.24 |
| PA EAST | 13024195701 | 1317337 | 2421 - GREENWOOD - REPL JO | 557 | (AC)INST 5185' 8", 4", & 2" PMMP | GREENWOOD | 133 | YOR | 2015 | \$899,009.01 | \$656,154.34 | \$162,994.89 |
| PA EAST | 13024196700 | 1317419 | 2421 - PINEHURST - REPL JO | 557 | INST 3099' - 2" PMMP | PINEHURST RD | 133 | YOR | 2015 | \$241,542.27 | \$429,993.90 | \$305,487.58 |
| PA EAST | 13024197100 | 1317458 | HAINES RD/I-83 HIGHWAY PROJECT | 557 | INST 1820'-8"; 217'-2" PMMP... | HAINES RD | 133 | YOR | 2015 | \$482,197.06 | \$572,510.94 | \$97,137.34 |
| PA EAST | 13024197301 | 1317459 | MT ROSE/I-83 HIGHWAY PROJECT | 557 | INST 2,530' OF 2" & 6" PMMP | MOUNT ROSE | 133 | YOR | 2017 | \$506,156.37 | \$550,246.35 | \$19,968.10 |
| PA EAST | 13024197502 | 1317459 | MT ROSE/I-83 HIGHWAY PROJECT | 561 | INST 1355'-6" & 903'-8" MAIN | MOUNT ROSE AV | 133 | YOR | 2015 | \$546,472.33 | \$557,425.31 | \$139,927.55 |
| PA EAST | 13024199401 | 1317543 | W MARKET ST REPLACEMENT PROJECT | 557 | 4390'2", 40'4", 750'6"&3540'8" P | W MARKET | 133 | YOR | 2015 | \$1,659,139.76 | \$1,539,363.28 | \$377,537.86 |
| PA EAST | 13024201100 | 1317545 | (AOP) E MARKET ST PAVE (PENNDOT) | 557 | (AOP)INST 4,330' 2,4,6,8 PMP | E MARKET ST | 133 | YOR | 2017 | \$994,814.80 | \$1,637,428.16 | \$726,151.64 |
| PA EAST | 13024202301 | 1317660 | AXEMANN ROAD REPLACEMENT PROJECT | 557 | INST 207'-6"PMMP&2393'-4"PMMP | AXEMANN RD | 027 | BEL | 2015 | \$705,426.81 | \$648,610.58 | \$87,947.86 |
| PA EAST | 13024205000 | 1208790 | QUEEN STREET REPLACEMENT PROJECT | 557 | INST 8596' - 6' & 2" PMMP (AC) | S QUEEN ST | 133 | DAL | 2015 | \$1,006,578.70 | \$450,110.48 | \$68,620.04 |
| PA EAST | 13024209600 | 1318386 | LEE STREET REPLACEMENT PROJECT | 557 | (OPNS) INST 1000'2"&535'4"PMMP | N LEE | 133 | HEL | 2015 | \$240,769.87 | \$289,956.99 | \$180,752.05 |
| PA EAST | 13024210100 | 1318423 | 2451 - BEAVER - REPL JO | 557 | INST 940' OF 4" PMMP | W BEAVER ST | 027 | BEL | 2015 | \$93,780.09 | \$163,965.87 | \$107,770.23 |
| PA EAST | 13024210600 | 1318452 | GALEN RD REPLACEMENT | 557 | INST 661'-6"PMMP&25'-4"PMMP | GALEN DR | 027 | STA | 2015 | \$64,659.63 | \$96,036.78 | \$58,107.84 |
| PA EAST | 13024211300 | 1318551 | 2421 - SALEM - REPL JO | 557 | INST 1305' 2"PMMP | SALEM AV | 133 | YOR | 2016 | \$327,907.14 | \$320,364.72 | \$344,316.32 |
| PA EAST | 13024212100 | 1318581 | 2421 - VALLEY - REPL JO | 557 | INST 150'-6";4464'-4";3066'-2" | VALLEY RD | 133 | JAC | 2015 | \$942,224.42 | \$1,136,183.87 | \$563,889.50 |
| PA EAST | 13024212602 | 1318678 | 2421 - ARLINGTON - REPL JO | 557 | INST 975' - 2" PMMP | ARLINGTON RD | 133 | YOR | 2017 | \$174,991.12 | \$173,922.61 | \$143,180.58 |
| PA EAST | 13024213501 | 1527924 | BELLAIRE AVE | 559 | INST 1335' - 2" PMMP | BELLAIRE AV | 027 | STA | 2015 | \$174,090.79 | \$251,043.69 | \$256,232.02 |
| PA EAST | 13024214200 | 1318893 | 2451 - PIKE - REPL JO | 557 | INSTALL 697' - 2" PMMP | PIKE AL | 027 | BEL | 2015 | \$110,687.48 | \$158,713.97 | \$121,197.31 |
| PA EAST | 13024215100 | 1318964 | N RIDGE ST BETTERMENT PROJECT | 559 | INST 465' - 2" PMIP | N RIDGE ST | 027 | BEL | 2015 | \$69,744.17 | \$103,107.38 | \$42,320.76 |
| PA EAST | 13024216100 | 1319044 | (AC) LOCUST ST - REPL JO | 557 | INST 4064'-2", 40'-4" PMMP | LOCUST ST | 133 | HAN | 2015 | \$549,449.81 | \$700,115.56 | \$737,251.61 |
| PA EAST | 13024221900 | 1319686 | 2421 - RAMPIKE HILL - REPL JO | 557 | INSTALL 1050'-4"PMMP | RAMPIKE HILL RD | 001 | BEN | 2015 | \$154,192.34 | \$216,606.28 | \$215,531.29 |
| PA EAST | 13024222400 | 1319702 | 2421 - CLOVER - REPL JO | 557 | INST 3140'-2" PMMP | CLOVER LN | 133 | YOR | 2015 | \$250,843.56 | \$286,462.08 | \$80,754.79 |
| PA EAST | 13024223201 | 1319287 | CARLISLE STREET REPLACEMENT PROJECT | 557 | INST 1087'-2",660'4",4879'-6" | BALTIMORE ST | 133 | HAN | 2018 | \$2,371,354.35 | \$2,682,721.25 | \$891,231.96 |
| PA EAST | 13024223401 | 1319287 | CARLISLE STREET REPLACEMENT PROJECT | 557 | INSTALL 10231'-PMMP PMLP | CARLISLE ST | 133 | HAN | 2016 | \$2,810,686.35 | \$3,011,002.40 | \$690,032.97 |
| PA EAST | 13024225400 | 1320024 | SEMINARY RD REPLACEMENT | 557 | INSTALL 1314'-2"PMMP | SEMINARY AV | 001 | GET | 2016 | \$123,820.12 | \$249,874.17 | \$213,000.27 |
| PA EAST | 14021341700 | 1427092 | WASHINGTON/MAPLE AC | 557 | INST -1380'-6"&4"PMMP-AC | S WASHINGTON/MAPLE ST | 055 | GRE | 2016 | \$200,005.81 | \$319,898.26 | \$142,145.08 |
| PA EAST | 14021341902 | 1427094 | WASHINGTON ST SOUTH PHASE 2 | 557 | INST 1219'-6",520'-2" PMMP | WASHINGTON ST 2 | 055 | GRE | 2017 | \$345,341.25 | \$430,634.18 | \$58,354.18 |
| PA EAST | 14021342300 | 1427098 | 2171 - FAYETTE - REPL JO | 557 | INSTALL 1315'-2"PMMP | S FAYETTE ST | 055 | MER | 2015 | \$145,043.64 | \$133,923.51 | \$11,053.80 |
| PA NORTH | 14022594900 | 1420318 | D-1009 GOTTlieb - STREET IMPROVEMENT | 561 | LAY 1500'-2" 1500'-8" HDPE HP | GRAND AV | 003 | PIT | 2015 | \$716,728.06 | \$507,891.29 | \$199,495.36 |
| PA NORTH | 14022595100 | 1420342 | 2239-PLEASANT AND HILLVIEW DR REPLACEM | 557 | 4670'-2" PMP | PLEASANT | 123 | WAR | 2015 | \$338,528.86 | \$174,745.75 | \$1,165.44 |
| PA NORTH | 14022605000 | 1420750 | VISTA LN REPLACEMENT PROJECT | 557 | LAY 765' & BORE 350' - 2" PMLP | INT CELIA RD AND VISTA | 007 | ELL | 2015 | \$96,035.46 | \$85,025.52 | \$11,941.23 |
| PA NORTH | 14022605400 | 1317783 | D-75 JACK'S RUN BRIDGE | 557 | PM - D-75 JACKS RUN BRIDGE | D-75 | 003 | PIT | 2015 | \$2,200,841.54 | \$2,330,128.05 | \$96,464.97 |
| PA NORTH | 14022607000 | 1420891 | 2238 - E. MAIN ST AMRP | 557 | 2440'-4"PMP 4520'-2"PMP UP6307 | MAIN | 083 | BRA | 2016 | \$1,093,617.49 | \$809,849.10 | \$658,068.34 |
| PA NORTH | 14022607200 | 1420904 | N CARVER ST AREA REPLACEMENT PROJECT | 557 | 500'-8"LP 900'-6"LP 4790'-2"MP | N CARVER | 123 | WAR | 2015 | \$1,063,424.88 | \$877,362.14 | \$283,284.58 |
| PA CENTRAL | 14022608500 | 1210367 | MIMOSA REPLACEMENT PROJECT | 559 | INSTALL 1885'-8"PHHP MAIN | STOLTZ | 003 | BET | 2015 | \$339,530.48 | \$222,997.16 | \$16,422.04 |
| PA CENTRAL | 14022608700 | 1210367 | MIMOSA REPLACEMENT PROJECT | 557 | INSTALL 3570'-4"PMMP MAIN | STOLTZ | 003 | BET | 2015 | \$138,783.22 | \$148,166.59 | \$3,106.64 |
| PA NORTH | 14022609900 | 1421103 | 2231 - CHURCH - REPL JO | 557 | LAY 300'-2" P | 6700 CHURCH AV | 003 | PIT | 2015 | \$44,738.23 | \$45,473.07 | \$18,335.50 |
| PA NORTH | 14022610200 | 1421125 | SEMPL AV - REPLACEMENT JOB | 557 | LAY 952'-4" PLP | SEMPL AV | 003 | PIT | 2015 | \$147,515.56 | \$207,126.10 | \$129,524.71 |
| PA NORTH | 14022610800 | 1421189 | D-86 REPLACEMENT, NEW BRIGHTON BORO | 557 | INST 6000'-8", 665'-4",575'-2" | 3RD AV | 007 | N-B | 2015 | \$1,475,898.39 | \$1,752,794.17 | \$1,315,156.61 |
| PA NORTH | 14022612201 | 1421294 | 9TH AVENUE REPLACEMENT PROJECT | 557 | LAY 240'-2" 480'-4" 1440'-6" P | 9TH AV | 007 | BVR | 2015 | \$576,459.08 | \$812,355.99 | \$786,553.37 |
| PA NORTH | 14022613800 | 1421364 | 4TH ST ELLPORT REPLACEMENT PROJECT | 557 | LAY 1200' PLASTIC LOW PRESSURE | 4TH ST | 073 | ELL | 2015 | \$177,306.48 | \$118,314.16 | \$23,835.70 |
| PA NORTH | 14022614400 | 1420556 | FULLERTON RD | 559 | INSTALL 3900'-2"PMP | FULLERTON | 083 | BRA | 2016 | \$146,212.49 | \$69,908.04 | \$2,511.66 |
| PA NORTH | 14022614500 | 1421392 | 2231 - WALKER - REPL JO | 557 | 200'-2" PLP WALKER AVE | WALKER AV | 003 | PIT | 2015 | \$33,160.07 | \$22,237.04 | \$3,269.97 |
| PA NORTH | 14022615100 | 1421396 | 2231 - PERRYSVILLE - REPL JO | 557 | LAY 470'-4" PLP PERRYSVILLE AV | PERRYSVILLE AV | 003 | PIT | 2015 | \$111,506.72 | \$77,805.48 | \$20,615.74 |
| PA NORTH | 14022620300 | 1421906 | D-22 AT LUNDYS LANE | 557 | INSTALL 80'-8"PMP | LUNDYS LN | 073 | ELL | 2015 | \$73,731.95 | \$96,975.90 | \$4,116.00 |
| PA NORTH | 14022620800 | 1421925 | PLEASANT/BENNETT ST REPLACEMENT PROJ. | 557 | INSTLL 2890'-8"PLP, 570'-4"PMP | PLEASANT ST | 083 | BRA | 2015 | \$626,999.04 | \$627,433.23 | \$306,811.59 |
| PA NORTH | 14022621001 | 1421932 | HAMILTON ST REPLACEMENT PROJECT | 557 | INSTALL 1600'-4" & 400'-6" | HAMILTON | 073 | N-C | 2016 | \$266,706.97 | \$462,159.95 | \$224,405.60 |
| PA NORTH | 14022621200 | 1421936 | SELDOM SEEN BTWN WOODLAND AND OAK GROV | 557 | LAY 1360'-2" PMMP SELDOM SEEN | SELDOM SEEN | 003 | BRA | 2015 | \$148,603.02 | \$183,897.66 | \$3,243.48 |
| PA NORTH | 14022621602 | 1421946 | 2231 - WILSON - REPL JO | 557 | INSTALL 1210'-4" PMMP | WILSON | 007 | AMB | 2015 | \$163,098.83 | \$161,399.41 | \$29,421.15 |
| PA NORTH | 14022621801 | 1421948 | 2231 - BIRCH - REPL JO | 557 | INSTALL 729' 2", 551' 4" P MP | BIRCH | 003 | COR | 2015 | \$239,013.77 | \$218,254.27 | \$207,888.92 |

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|------------|-------------|---------|--|-----|-----------------------------------|--------------------|-----|-----|------|----------------|----------------|--------------|
| PA NORTH | 14022622000 | 1421950 | 2231 - SUNFLOWER - REPL JO | 557 | LAY 2727'-4" PMP | SUNFLOWER | 007 | N-B | 2015 | \$387,202.77 | \$333,652.31 | \$157,593.21 |
| PA NORTH | 14022622500 | 1421975 | BIRCH WAY BETWEEN 6TH AND 5TH | 557 | LAY 200'-6" PMP | BIRCH | 073 | ELL | 2015 | \$20,710.87 | \$71,714.53 | \$35,732.70 |
| PA NORTH | 14022622701 | 1421977 | 2231 - HOENIG - REPL JO | 557 | INSTALL 760'-2" PMP | 636 HOENIG RD | 007 | BAD | 2015 | \$154,084.34 | \$156,398.47 | \$19,127.15 |
| PA CENTRAL | 14022623200 | 1421988 | STUEBENVILLE REPLACEMENT PROJECT | 557 | INST 1395'-4" PIP MAIN | STUEBENVILLE | 003 | OAK | 2015 | \$136,726.15 | \$181,920.29 | \$42,416.34 |
| PA CENTRAL | 14022623900 | 1421993 | ARLINGTON REPLACEMENT PROJECT | 557 | INSTALL 820'-8" PMMP MAIN | ARLINGTON | 003 | PIT | 2015 | \$456,225.12 | \$499,156.17 | \$313,008.89 |
| PA NORTH | 14022624101 | 1422021 | FAIRLANE BTWN CAREYWD & BIG BEAVER | 557 | LAY 2080'-4" PMLP | 140 FAIRLANE BV | 007 | KOP | 2016 | \$167,544.10 | \$401,987.01 | \$23,372.28 |
| PA CENTRAL | 14022624301 | 1422023 | 2221 - THOMPSON - REPL JO | 557 | INSTALL 6" WILLIAMSON SST | THOMPSON AV | 003 | MCK | 2016 | \$31,549.16 | \$100,194.78 | \$19,101.80 |
| PA CENTRAL | 14022628700 | 1422247 | MCLAUGHLIN RUN PPHP REPLACEMENT | 557 | INSTALL 1140' 8" PLASTIC HP | 1820 MCLAUGHLIN RD | 003 | PIT | 2015 | \$308,343.37 | \$480,210.21 | \$140,900.26 |
| PA CENTRAL | 14022628900 | 1530648 | MCROBERTS RD VALVE REPL | 557 | REPL.20"VALVE &(2)8" VALVES | MCROBERTS RD | 003 | PIT | 2015 | \$312,656.37 | \$591,094.93 | \$40,005.76 |
| PA NORTH | 14022630101 | 1422336 | WURTEMBERG RD REPLACEMENT PROJECT | 557 | LAY 2055'-6", 1500'-4" & 1730'-2" | WURTEMBERG | 073 | ELL | 2015 | \$502,173.07 | \$534,840.67 | \$210,297.40 |
| PA NORTH | 14022631000 | 1422403 | D-22 AT COUNTRYVIEW ROAD REPLACEMENT | 557 | INST 10300'-8"HDPE,100'-2"HDPE | COUNTRYVIEW | 019 | SLI | 2015 | \$680,453.93 | \$751,321.66 | \$29,551.38 |
| PA NORTH | 14022631800 | 1422463 | KENYON AVENUE REPLACEMENT PROJECT | 557 | LAY 3200'-4" & 920'-2" PMP | KENYON | 003 | PIT | 2015 | \$564,378.40 | \$397,989.24 | \$137,480.19 |
| PA NORTH | 14022632900 | 1422518 | KNOX AMRP PHASE 1 | 557 | INST 4000'-2", 5625'-4" PM MP | STEWART RD | 031 | KNO | 2015 | \$1,240,313.67 | \$1,229,487.49 | \$845,054.53 |
| PA NORTH | 14022634100 | 1422540 | HOMEWOOD AMRP | 557 | LAY 6506' 4" & 7037' 2" PPHP | NORWOOD DR | 007 | RAC | 2016 | \$1,683,241.77 | \$1,276,904.83 | \$608,714.66 |
| PA NORTH | 14022637301 | 1422756 | RIDGE ROAD AMRP | 557 | LAY 4150'-2" 6460'-4" PMP | RIDGE | 007 | AMR | 2016 | \$1,832,342.88 | \$1,624,717.97 | \$927,946.04 |
| PA NORTH | 14022637601 | 1422783 | GLENFIELD RD, FERRY RD REPLACEMENT | 557 | LAY 3350'-2" PMMP | GLENFIELD RD | 003 | SEW | 2016 | \$592,186.38 | \$431,890.32 | \$323,134.51 |
| PA NORTH | 14022638000 | 1422106 | STATION 4763, 9TH AVE, NEW BRIGHTON | 559 | STATION 4783 INLET & OUTLET | 9TH AV | 007 | N-B | 2016 | \$123,091.62 | \$210,045.94 | \$55,126.35 |
| PA NORTH | 14022642101 | 1423031 | THAWMONT DR REPLACEMENT | 557 | INSTALL 2400'-2" P | THAWMONT RD | 003 | SEW | 2015 | \$184,451.01 | \$75,087.67 | \$248.40 |
| PA NORTH | 14022642600 | 1423044 | 900 BLOCK OF WAYNE AV -AC 5-31-16 DATE | 557 | OC 135'/DB165'4"PMLP ACT CORR | 900 WAYNE AV | 073 | ELL | 2015 | \$73,962.11 | \$90,566.32 | \$23,889.96 |
| PA CENTRAL | 14022645800 | 1423159 | GLENCOE REPLACEMENT PROJECT | 557 | INSTALL 1900'-4" P MAIN | GLENCOE | 003 | PIT | 2015 | \$370,301.49 | \$490,333.77 | \$270,286.54 |
| PA NORTH | 14022650200 | 1423456 | 2231 - MELODY - REPL JO | 557 | INSTALL 420' OF 4" PMMP | MELODY | 073 | N-C | 2016 | \$62,921.49 | \$76,789.35 | \$4,224.28 |
| PA NORTH | 14022650400 | 1423457 | ALBERT BETWEEN MEYER & EDGEWOOD | 557 | INSTALL 2095' - 4" PMLP | ALBERT | 073 | N-C | 2016 | \$356,562.58 | \$390,869.52 | \$174,171.33 |
| PA NORTH | 14022650800 | 1423459 | MARTHA ST BETWEEN BYERS & BRYSON HILL | 557 | OC600'6"PM/DB750'6"PM/OC600'4" | MARTHA ST | 073 | N-C | 2016 | \$305,687.61 | \$401,789.57 | \$262,094.81 |
| PA CENTRAL | 14022651800 | 1423483 | FALLOWFIELD | 557 | INSTALL 1155'- 2" PMP | FALLOWFIELD | 003 | PIT | 2019 | \$311,158.94 | \$595,682.37 | \$295,459.60 |
| PA NORTH | 14022652000 | 1423502 | MARYLAND AVENUE REPLACEMENT PROJECT | 557 | 1050'-4"PMMP /MARYLAND AV | MARYLAND | 073 | N-C | 2016 | \$301,267.84 | \$225,160.29 | \$97,508.73 |
| PA NORTH | 14022652200 | 1423504 | SAMPSON ST REPLACEMENT PROJECT | 557 | DB 1430'-4" & OC 337'-4" PMMP | SAMPSON ST | 073 | N-C | 2016 | \$236,406.77 | \$252,388.62 | \$121,825.43 |
| PA NORTH | 14022653301 | 1423543 | HOME ST-NEW CASTLE 12-31-15 | 557 | DB-660'-2" PMMP/HOME ST @ MILL | HOME | 073 | N-C | 2016 | \$245,858.20 | \$132,375.80 | \$100,767.99 |
| PA NORTH | 14022653500 | 1423544 | SHARP ST - MORRIS ST- HANNA ST | 557 | LAY 1850'-4"PM(HIGH OPTIMAIN) | SHARP | 073 | N-C | 2016 | \$546,210.57 | \$391,185.12 | \$365,722.31 |
| PA CENTRAL | 14022653702 | 1423554 | HOLLY HILL VALVE ABN | 557 | REPLACE FAILING VALVE-LEAKAGE | 1594 HOLLY HILL DR | 003 | BET | 2016 | \$15,047.22 | \$22,215.77 | \$5,822.29 |
| PA NORTH | 14022654201 | 1423570 | 2238 - WAGNER AVE REPLACEMENT | 557 | INSTALL 1000'-6" PMMP | WAGNER | 083 | BRA | 2015 | \$133,147.76 | \$62,009.45 | \$3,149.50 |
| PA NORTH | 14022654401 | 1423571 | 2238 - CORYDON ST AREA AMRP | 557 | 1300'-6"LP 1000'-4"MP 600'-2MP | CORYDON | 083 | BRA | 2015 | \$626,226.90 | \$660,326.62 | \$610,190.65 |
| PA NORTH | 14022654701 | 1423597 | 2239 - BRADLEY ST REPLACEMENT | 557 | VOID IF NOT NEEDED | BRADLEY | 123 | WAR | 2015 | \$771.42 | \$37.91 | |
| PA NORTH | 14022655400 | 1423681 | COCHRAN ST BETWEEN NEVIN & BEAVER | 557 | LAY 1787'-6" PLP 986'-4"PLP | COCHRAN | 003 | SEW | 2015 | \$375,278.49 | \$341,823.26 | \$148,361.08 |
| PA NORTH | 14022656600 | 1423793 | 2231 - D-1680 - REPL JO | 557 | D-1680 PHASE 1-8000'-10" WT | D-1680 | 007 | FRE | 2015 | \$2,165,655.39 | \$2,398,254.51 | \$4,279.62 |
| PA NORTH | 14022657301 | 1423821 | MAYFIELD ROAD - MANOR ROAD | 557 | INSTALL 2400' OF 2" PMP | MAYFIELD | 003 | WEX | 2015 | \$211,562.37 | \$196,363.28 | \$18,200.14 |
| PA NORTH | 14022657501 | 1423822 | MOUND STEET REPLACEMENT | 557 | LAY 350'-4" PMLP MOUND ST | MOUND | 003 | AMB | 2016 | \$143,061.42 | \$187,138.09 | \$91,621.71 |
| PA NORTH | 14022657700 | 1423825 | BEAVER GRADE - REPLACEMENT PROJECT | 557 | INSTALL 2149' 6" P MP | BEAVER GRADE RD | 003 | COE | 2016 | \$189,146.33 | \$227,796.52 | \$66.70 |
| PA NORTH | 14022658001 | 1423828 | 2231 - 1ST - REPL JO | 557 | INSTALL 10'-2" PLP & 10'-2" CS | 1ST | 007 | ALI | 2016 | \$72,034.56 | \$84,337.81 | \$8,864.82 |
| PA NORTH | 14022658301 | 1423832 | GERMAIN ROAD | 557 | INSTALL APPROX 1000' 4" PMP | GERMAIN | 003 | WEX | 2016 | \$146,353.12 | \$183,135.04 | \$12,185.40 |
| PA NORTH | 14022658500 | 1423833 | ADAMS ST REPLACEMENT | 557 | INSTALL 1,412'6" P LP | ADAMS ST | 007 | ROC | 2016 | \$456,572.18 | \$538,556.84 | \$306,118.23 |
| PA NORTH | 14022658700 | 1423834 | CHURCH AV - REPL JO | 557 | LAY 300'-2" AND 250'-4" PMLP | CHURCH | 003 | PIT | 2016 | \$123,633.08 | \$134,474.33 | \$119,089.57 |
| PA NORTH | 14022659000 | 1423835 | 6TH STREET | 557 | INSTALL APPROX. 1000' 4" PLP | 15TH AV | 007 | BVR | 2015 | \$115,422.34 | \$109,040.94 | \$49,221.10 |
| PA NORTH | 14022659201 | 1423838 | LAUREL REPLACEMENT PROJECT | 557 | LAY 3078' OF 6", 4" & 2" PLP | LAUREL | 073 | N-C | 2015 | \$361,600.73 | \$390,541.65 | \$305,649.26 |
| PA NORTH | 14022660900 | 1423862 | PEARCE MILL - REPLACEMENT JOB | 557 | LAY 3100'-4" PMMP | PEARCE MILL | 003 | WEX | 2016 | \$545,147.18 | \$562,141.99 | \$305,558.74 |
| PA NORTH | 14022661102 | 1423883 | DUTCH RIDGE ROAD REPLACEMENT | 557 | INSTALL 3800'-284" PMMP | DUTCH RIDGE RD | 007 | BEA | 2019 | \$895,250.78 | \$557,185.63 | \$111,605.49 |
| PA NORTH | 14022661700 | 1423896 | 2231 - HARBAUGH - REPL JO | 557 | LAY 160'-8" & 177'-6" PLP | HARBAUGH ST | 003 | SEW | 2015 | \$162,111.24 | \$174,502.13 | \$50,454.50 |
| PA CENTRAL | 14022662000 | 1423935 | SUNNYFIELD REPLACEMENT PROJECT | 557 | REPLACE 3,200' 4"ST W/4" P | SUNNYFIELD DR | 003 | PIT | 2015 | \$244,312.80 | \$320,152.64 | \$120,802.79 |
| PA NORTH | 14022663201 | 1424052 | 2231 ELM RD FROM 5TH ST TO WILSON AVE | 557 | INSTALL 3800' OF 4" PMP | ELM RD | 007 | AMB | 2015 | \$847,531.44 | \$635,475.00 | \$408,999.72 |
| PA CENTRAL | 14022666501 | 1320191 | MT LEBANON MP REPLACEMENT PROJECT | 557 | 170'-8"PMP,180'-2"P | CEDAR BLVD | 003 | PIT | 2015 | \$167,251.49 | \$306,211.48 | \$2,879.12 |
| PA NORTH | 14022667000 | 1424234 | 6TH AVENUE - REPLACEMENT JOB | 557 | INSTALL 2000'-2" PMP | 6TH AV | 007 | BVR | 2015 | \$424,343.88 | \$570,878.35 | \$579,248.44 |
| PA CENTRAL | 14022667700 | 1424309 | OLD CLAIRTON ROAD REPLACEMENT PROJECT | 557 | INSTALL 1154'6" PL BY DIR-BORE | OLD CLAIRTON | 003 | PIT | 2015 | \$225,577.07 | \$583,894.87 | \$218,415.33 |
| PA NORTH | 14022668500 | 1421694 | NORTHGATE - REPLACEMENT PROJECT | 559 | LAY 2342' PM MP | MT PLEASANT RD | 003 | WAR | 2015 | \$352,376.63 | \$624,370.92 | \$182,250.05 |
| PA CENTRAL | 14022669502 | 1424456 | SPRUCEWOOD DRIVE REPLACEMENT JOB | 557 | INSTALL 390'-4"PMMP | SPRUCEWOOD DR | 003 | BET | 2015 | \$53,198.50 | \$54,623.14 | \$0.00 |
| PA NORTH | 14022670700 | 1424644 | MT HERMAN CHURCH RD AT MILL BRIDGE | 557 | 1080'4"PMP@RT422 AND MT HERMAN | SR0422 | 073 | N-C | 2015 | \$90,845.58 | \$152,286.31 | \$24,357.78 |
| PA NORTH | 14022671401 | 1424697 | BROAD STREET BETWEEN KOST/MOHAWK | 557 | INSTALL 1700' OF 4" PLP | BROAD | 003 | LEE | 2016 | \$376,634.61 | \$648,044.48 | \$481,461.49 |
| PA CENTRAL | 14022672700 | 1427230 | LOCUST DR AND MITCHELL DR PROJECT | 557 | LAY 900'-4" PIP & 617'-2"PIP | MITCHELL | 003 | PIT | 2015 | \$255,978.57 | \$242,783.32 | \$85,434.47 |
| PA NORTH | 14022674100 | 1424859 | UNION ST | 559 | INSTALL 3'-4" PLP | PENNSYLVANIA | 123 | WAR | 2015 | \$9,419.72 | \$6,548.79 | \$174.72 |
| PA NORTH | 14022674600 | 1424873 | S CIRCLE RELOCATION PROJECT | 559 | S CIRCLE RD - LAY 120'-2" PMMP | S CIRCLE RD | 007 | N-B | 2015 | \$24,924.50 | \$52,616.86 | |

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| PA NORTH | 14022675200 | 1424882 | 2239 - HICKORY ST AREA REPLACEMENT | 557 | INSTALL 1574' 2" PMP | HICKORY | 123 | WAR | 2015 | \$182,435.13 | \$171,439.89 | \$66,724.68 |
| PA NORTH | 14022677400 | 1425100 | CARWICK ROAD REPLACEMENT | 557 | INST 1,290'-2" PM LP | CARWICK | 031 | RIM | 2015 | \$214,640.48 | \$159,699.69 | \$25,789.79 |
| PA NORTH | 14022680001 | 1425295 | 3RD STREET REPLACEMENT | 557 | INSTALL 1730'-4" PMLP | BEAVER ST | 007 | BEA | 2017 | \$379,324.62 | \$425,045.70 | \$170,920.24 |
| PA NORTH | 14022684400 | 1425617 | DEAN ROAD/ WARRENDALE ROAD | 557 | INSTALL 3920' OF 2" PMP | DEAN RD | 003 | MAR | 2015 | \$234,763.31 | \$224,909.48 | \$16,323.48 |
| PA CENTRAL | 14022684600 | 1425622 | 2221 - OAKVILLE RD CP 4797 REPLCMNT | 557 | REPLACE VALVE CP 4797 FIRE GT | CRANE AV | 003 | PIT | 2015 | \$43,891.06 | \$39,667.26 | \$1,209.00 |
| PA NORTH | 14022688200 | 1425840 | 2231 - ANTHONY WAYNE - REPL JO | 557 | INSTALL 1705'-4" PMMP | ANTHONY WAYNE DR | 007 | BAD | 2016 | \$318,067.72 | \$245,722.17 | \$148,378.13 |
| PA NORTH | 14022688400 | 1425841 | 2231 - COMPTON - REPL JO | 557 | INSTALL 980'-4" PMMP | COMPTON RD | 007 | SEW | 2015 | \$92,048.15 | \$75,097.18 | \$33,811.58 |
| PA NORTH | 14022688602 | 1425842 | PARK RD REPLACEMENT | 557 | INSTALL 3920'-2, 4, 6" PMLP | PARK RD | 007 | AMB | 2016 | \$599,874.31 | \$805,424.00 | \$687,162.97 |
| PA NORTH | 14022689400 | 1425888 | CLEARVIEW @ REYNOLDS ST/ N-C | 557 | LAY 170'-2" PM CLEARVIEW | 1208 CLEARVIEW ST | 073 | N-C | 2016 | \$38,001.75 | \$36,086.91 | \$18,066.42 |
| PA CENTRAL | 14022690300 | 1635014 | BOWER HILL RD MP REPLACEMENT PROJECT | 557 | LAY3736'-8",480'-2",160'-4" PMP | BOWER HILL RD | 003 | PIT | 2016 | \$1,195,288.92 | \$1,002,246.40 | \$463,053.82 |
| PA NORTH | 14022691000 | 1423507 | PALO ALTO DR (D-500) REPLACEMENT | 557 | INSTALL 2000'-6" & 400'-4" PMP | D-500 | 073 | ELL | 2015 | \$277,148.75 | \$757,152.67 | \$670,000.04 |
| PA NORTH | 14022691500 | 1426141 | PENN AVE BRIDGE RELOCATION | 561 | INSTALL 8"CSMP BRIDGE CROSSING | PENNSYLVANIA AV | 123 | WAR | 2016 | \$70,454.05 | \$82,372.53 | \$20,354.91 |
| PA NORTH | 14022693100 | 1426359 | BURNS ST AT SCOTLAND LANE NEW CASTLE | 557 | LAY540'-4"/DB150'-2" PM/BURNS | BURNS ST | 073 | N-C | 2016 | \$83,275.49 | \$89,809.17 | \$18,873.43 |
| PA CENTRAL | 14022693500 | 1423584 | D-1581 UPPER ST. CLAIR PARK | 557 | PM-D-1581 UPPER ST. CLAIR PARK | SHENADOAH DR | 003 | PIT | 2015 | \$4,669,846.88 | \$5,355,951.92 | \$396,541.37 |
| PA NORTH | 14022693900 | 1210517 | D-1601 PHASE IV | 557 | PM-D-1601 PHASE 4 REPLACEMENT | MILLER RD | 073 | N-C | 2015 | \$1,985,148.97 | \$2,081,794.99 | \$64,012.49 |
| PA CENTRAL | 14022694400 | 1530168 | SEGAR RD GATE NEST ABANDONMENT | 557 | INSTALL 20 FT-8" PMMP | SEGAR RD | 003 | PIT | 2015 | \$21,213.05 | \$38,856.25 | \$0.00 |
| PA NORTH | 14022695900 | 1426559 | PINE TWP RD WIDENING | 561 | INSTALL 1080'-6" & 780'-4" PMP | WARRENDALE BAYNE RD | 003 | WEX | 2015 | \$387,599.01 | \$361,311.70 | \$73,077.48 |
| PA NORTH | 14022696901 | 1426589 | POPETOWN ROAD REPLACEMENT | 557 | INSTALL 1015'-2" PM MP | POPETOWN | 031 | KNO | 2015 | \$71,875.09 | \$60,474.28 | \$0.00 |
| PA NORTH | 14022697200 | 1426589 | POPETOWN ROAD REPLACEMENT | 559 | INST 50'-2" CS INLET/OUT 4785 | WAGNER LN | 031 | KNO | 2015 | \$14,440.55 | \$20,454.84 | \$0.00 |
| PA CENTRAL | 14022697900 | 1426606 | MCLAUGHLIN RUN PMMP REPLACEMENT | 557 | INST.4" P MP IN COMMON TRENCH | MCLAUGHLIN RUN | 003 | PIT | 2015 | \$34,438.04 | \$29,639.29 | \$0.00 |
| PA CENTRAL | 14022698100 | 1426641 | TRANSPORT ST | 559 | INSTALL 90FT'-4" P | GLENBURY ST | 003 | PIT | 2015 | \$17,115.00 | \$29,801.10 | \$8,267.12 |
| PA CENTRAL | 14022699001 | 1426675 | 2221 - WASHINGTON - REPL JO | 557 | 3NSTALL 125' - 6", 4" PLP | WASHINGTON | 003 | PIT | 2016 | \$70,464.79 | \$124,449.20 | \$39,199.80 |
| PA NORTH | 14022699300 | 1426686 | REGULATOR 4650 REPLACEMENT | 559 | INLET/OUTLET PIPE R-4650 | DARLINGTON RD | 007 | BVR | 2015 | \$30,726.21 | \$58,250.75 | \$39,438.00 |
| PA NORTH | 14022699400 | 1424800 | ALIQUIPPA METAL RECOVERY | 559 | LAY 1200'-6" PHHP | 100 BET TECH DR | 007 | ALI | 2015 | \$27,634.78 | \$6,488.93 | \$0.00 |
| PA NORTH | 14022699600 | 1420410 | PLAINS CHURCH ROAD BETTERMENT PROJECT | 559 | PLAINS CHURCH ROAD M O'HERRON | PLAINS CHURCH RD | 019 | CRA | 2015 | \$59,597.83 | (\$4,626.06) | \$0.00 |
| PA CENTRAL | 14022700100 | 1426698 | 2221 - BELL - REPL JO | 557 | REPLACE 10FT - 4" P LP | BELL | 003 | MCK | 2015 | \$11,120.44 | \$9,355.37 | \$0.00 |
| PA NORTH | 14022700700 | 1317643 | WARRENDALE POINTE APARTMENT | 559 | 2720'-4",1240'-2" HDPE WARRENDA | WHEATLAND RD | 003 | WAR | 2015 | \$34,863.64 | (\$806.80) | \$0.00 |
| PA NORTH | 14022700900 | 1426728 | CHESTNUT STREET REPLACEMENT | 557 | 1420'-4" & 80'-2" PM LP | CHESTNUT ST | 031 | HAW | 2015 | \$175,795.75 | \$121,836.12 | \$28,101.22 |
| PA NORTH | 14022701100 | 1426730 | CHURCH ALLEY REPLACEMENT | 557 | INSTALL 910'-4" PM MP, 35'-2" | D-5293 | 031 | FOX | 2015 | \$106,484.80 | \$84,374.70 | \$5.91 |
| PA NORTH | 14022701701 | 1426771 | TIBBITTS ST RELOCATION | 561 | RELOCATE 420' - 4" PMLP | TIBBITTS | 083 | BRA | 2016 | \$13,360.09 | \$29,152.64 | \$4,815.72 |
| PA NORTH | 14022701900 | 1426772 | 2239 - EAST - REPL JO | 557 | INSTALL -760' - 4" PMLP | EAST | 123 | WAR | 2015 | \$68,429.37 | \$37,362.85 | \$0.00 |
| PA CENTRAL | 14022704100 | 1320191 | MT LEBANON MP REPLACEMENT PROJECT | 557 | INS 550' 2" PMMP & 1400' 4" PMMP | BOWER HILL | 003 | PIT | 2015 | \$816,704.91 | \$651,518.07 | \$467,986.24 |
| PA CENTRAL | 14022704500 | 1426914 | CASTLE SHANNON BLVD REPLACEMENT | 557 | REP 1460'-6" PMMP/200'-6.8" PMLP | CASTLE SHANNON | 003 | PIT | 2015 | \$398,912.51 | \$300,801.79 | \$18,518.43 |
| PA CENTRAL | 14022704700 | 1426914 | CASTLE SHANNON BLVD REPLACEMENT | 557 | REPL 1350'-6" PMMP/380'-8" PMLP | CASTLE SHANNON | 003 | PIT | 2015 | \$348,189.81 | \$395,382.30 | \$189,704.48 |
| PA CENTRAL | 14022704900 | 1426914 | CASTLE SHANNON BLVD REPLACEMENT | 557 | REPL 755'-4" PMMP/UPRATE 345' | SHADY | 003 | PIT | 2015 | \$189,101.42 | \$296,377.85 | \$10,815.05 |
| PA NORTH | 14022705800 | 1426956 | 2231 - 5TH - REPL JO | 557 | INSTALL 850' - 4" PLASTIC | 5TH ST | 007 | BEA | 2015 | \$96,544.96 | \$119,220.69 | \$27,713.65 |
| PA NORTH | 14022707500 | 1427067 | SAVANNAH ST REPLACEMENT | 557 | LAY 1776'-10" CSHP, 288'-4" PMMP | SAVANNAH | 073 | N-C | 2016 | \$817,691.19 | \$502,154.49 | \$63,242.58 |
| PA NORTH | 14022707900 | 1427079 | RIVER RD REPLACEMENT PROJECT | 557 | INSTALL 3456' OF 4" PMMP | RIVER | 007 | ELL | 2017 | \$387,313.81 | \$323,460.02 | \$90,201.17 |
| PA NORTH | 14022708100 | 1427083 | CONSTITUTION REPLACEMENT PROJECT | 557 | INSTALL -3510' - 4" & 2" PMLP | CONSTITUTION | 007 | ELL | 2016 | \$232,067.93 | \$199,434.23 | \$71,447.76 |
| PA NORTH | 14022709101 | 1427147 | 3RD AVE REPLACEMENT PROJECT | 557 | LAY 110'-2" PMMP | 3RD (QUARRY) AV | 007 | CON | 2016 | \$21,898.49 | \$9,215.99 | \$1,074.00 |
| PA NORTH | 14022710100 | 1427170 | MONACA HEIGHTS R-3371 | 559 | IN/OUT PIPING R-3371 | MARSHALL RD | 007 | MON | 2015 | \$358,130.68 | \$779,542.80 | \$0.00 |
| PA NORTH | 14022711200 | 1427217 | PINE DRIVE | 557 | INSTALL 4" SS | PINE DR | 003 | COR | 2016 | \$8,751.02 | \$4,828.95 | \$0.00 |
| PA CENTRAL | 14022711400 | 1427222 | CASTLE SHANNON BLVD MP | 559 | INST 495'-6" PMMP MAIN | CASTLE SHANNON | 003 | PIT | 2015 | \$116,540.74 | \$114,092.72 | \$6,704.80 |
| PA NORTH | 14022711501 | 1427223 | SR2011 NICKLEVILLE ROAD REPLACEMENT | 557 | INST. 4,030' -2" PM MP | SR2011 | 121 | EML | 2015 | \$255,940.73 | \$378,621.96 | \$21,618.82 |
| PA NORTH | 14022711800 | 1427246 | TANK ALLEY REG | 557 | INSTALL 500' 4" PMP | TANK AL | 007 | BVR | 2016 | \$66,441.03 | \$105,029.12 | \$26,694.36 |
| PA NORTH | 14022712300 | 1427259 | PERRYVILLE ROAD REPLACEMENT | 559 | INSTALL 80'-2" PM IP | PERRYVILLE RD | 031 | PAR | 2015 | \$49,963.97 | \$12,873.62 | \$0.00 |
| PA NORTH | 14022713200 | 1424314 | E MAIN REPLACEMENT | 557 | LAY 550'-6"/2130'-2" PMMP | E MAIN | 083 | BVA | 2015 | \$795,463.30 | \$589,313.69 | \$331,251.52 |
| PA NORTH | 14022714200 | 1427423 | KOSSUTH ST REPLACEMENT | 557 | INSTALL 1370'-2" & 440'-8" PMLP | KOSSUTH ST | 007 | ROC | 2017 | \$353,432.24 | \$304,082.12 | \$220,622.76 |
| PA NORTH | 14022714500 | 1427440 | 2231 - 40TH - REPL JO | 557 | INSTALL 600'-2" PMMP | 415 40TH ST | 007 | BVR | 2015 | \$69,846.14 | \$92,035.58 | \$49,754.46 |
| PA SOUTH | 14023306700 | 1316312 | PENNSYLVANIA AVE REPLACEMENT PROJECT | 557 | INST/UPRATE 1,314' - 2" P-MP | GREGG | 129 | N H | 2015 | \$85,033.17 | \$79,673.45 | \$17,800.64 |
| PA CENTRAL | 14023307500 | 1420518 | SOUTH MAIN ST EXT REPLACEMENT PROJECT | 557 | INSTALL 3700'-4" PMMP | S MAIN ST EXT | 125 | WAS | 2015 | \$606,491.79 | \$466,610.29 | \$46,806.58 |
| PA CENTRAL | 14023310400 | 1420757 | FAWCETT CHURCH ROAD REPLACEMENT PROJEC | 557 | INSTALL 710' - 2" PMIP | FAWCETT CHURCH RD | 125 | CEC | 2015 | \$56,215.55 | \$94,235.17 | \$3,315.01 |
| PA SOUTH | 14023313001 | 1420963 | WARWICK MINE RELOCATION PROJECT | 561 | D/B 3160'-6" PMP, 300'-2" PMP | D- 7194 | 059 | GRE | 2016 | \$70,890.81 | \$100,767.78 | \$0.00 |
| PA SOUTH | 14023316000 | 1320150 | SR 21, SEC J10 ROAD PROJECT | 561 | INSTALL 3,000'-4" PMP, 535'-2" PMP | MCCLELLANDTOWN RD | 051 | UNI | 2015 | \$335,157.71 | \$380,847.40 | \$32,920.53 |
| PA SOUTH | 14023316602 | 1421284 | 2321 - WALNUT - REPL JO | 557 | INST 1431'-6", 38'-2" P, 5'-8" CS | WALNUT ST | 125 | DON | 2015 | \$334,532.03 | \$296,322.98 | \$133,071.68 |
| PA SOUTH | 14023316801 | 1421287 | 2321 - NORTH - REPL JO | 557 | INSTALL 954' - 4' & 6" P-LP | NORTH | 129 | N H | 2015 | \$134,335.02 | \$158,372.86 | \$24,054.02 |
| PA CENTRAL | 14023318000 | 1421355 | D-6326 - REPLACEMENT PROJECT | 557 | LAY 1410'-2" PMP | D-6326 | 059 | GRA | 2015 | \$103,288.80 | \$5,159.96 | \$0.00 |
| PA CENTRAL | 14023318900 | 1421152 | SOUTHPOINTE II TOWN SQUARE BLG | 559 | INSTALL 2,000'-8" PMP | NETWORK DR | 125 | CAN | 2015 | \$196,869.38 | \$476,184.02 | \$0.00 |

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|------------|-------------|---------|--|-----|---------------------------------|---------------------|-----|-----|------|----------------|----------------|--------------|
| PA CENTRAL | 14023319500 | 1421666 | BROOK AVENUE REPLACEMENT PROJECT | 557 | DB 1185'-2"PMP | BROOK AVE | 125 | WAS | 2015 | \$80,398.29 | \$85,645.01 | \$11,020.18 |
| PA SOUTH | 14023320701 | 1421896 | VINE REPLACEMENT PROJECT | 557 | INST 2,875' 8", 4" & 2"P-LP | VINE | 129 | W N | 2015 | \$558,217.51 | \$643,816.32 | \$331,076.60 |
| PA CENTRAL | 14023325301 | 1422318 | SR 50 & SR 980 RELOCATION | 561 | RELOCATE 400'-8"PMMP | MILLERS RUN RD | 125 | CEC | 2015 | \$248,134.04 | \$169,370.59 | \$14,950.41 |
| PA CENTRAL | 14023325700 | 1422396 | RIDGEWOOD ROAD REPLACEMENT PROJECT | 557 | INSTALL 900' - 6" PMMP | RIDGEWOOD | 125 | FRE | 2015 | \$131,266.29 | \$238,087.12 | |
| PA CENTRAL | 14023325900 | 1422401 | VISTA VALLEY REPLACEMENT PROJECT | 557 | INSTALL 7370'-2" PMMP | VISTA VALLEY | 125 | WAS | 2015 | \$730,094.41 | \$439,530.10 | \$15,645.84 |
| PA SOUTH | 14023326800 | 1316399 | WOOD STREET REPLACEMENT PROJECT | 557 | INSTALL 5,377' - 2" & 4" P-MP | WOOD | 125 | CAL | 2015 | \$913,713.64 | \$1,468,769.65 | \$630,757.04 |
| PA CENTRAL | 14023330601 | 1423144 | LONE PINE RD RELOCATION | 557 | INSTALL 400' - 2" PMP | LONE PINE RD | 125 | WAS | 2017 | \$116,112.50 | \$105,899.24 | \$0.00 |
| PA CENTRAL | 14023334200 | 1426913 | TERRY FARM LANE BETTERMENT PROJECT | 559 | DB 2040'-4"PMP, 1000'-2"PMP | TERRY FARM LN | 125 | STR | 2015 | \$254,511.04 | \$192,460.79 | \$13,443.96 |
| PA CENTRAL | 14023335101 | 1423532 | NOBLESTOWN ROAD REPLACEMENT PROJECT | 557 | INSTALL 2880' - 6" PMMP | NOBLESTOWN RD | 003 | OAK | 2015 | \$466,927.73 | \$426,167.78 | \$35,298.88 |
| PA SOUTH | 14023337101 | 1423747 | 2321 - RT 40 - REPL JO / ELM ST UPRATE | 557 | INSTALL 650'-6"PMP | E MAIN ST | 051 | UNI | 2015 | \$90,895.03 | \$125,771.30 | \$1,136.60 |
| PA CENTRAL | 14023337700 | 1423823 | WESTERN AVENUE REPLACEMENT PROJECT | 557 | INSTALL 1750' 2"-PMP | WESTERN | 125 | HOU | 2015 | \$172,336.32 | \$263,239.10 | \$129,909.14 |
| PA SOUTH | 14023338700 | 1423880 | CARMINE DR - 2321 | 557 | INSTALL 1853' - 4" PMMP | CARMINE DR | 129 | N H | 2017 | \$185,609.26 | \$287,138.97 | \$98,966.38 |
| PA CENTRAL | 14023339700 | 1423960 | 2391 - SR 18 - REPL JO | 557 | INSTALL CL15509 | SR 18 | 059 | WAY | 2015 | \$273.70 | \$0.00 | |
| PA SOUTH | 14023343701 | 1424549 | 2321 - MAIN - REPL JO | 557 | INSTALL 344' OF 4" PMMP | MAIN | 111 | SOM | 2015 | \$107,942.65 | \$128,749.31 | \$33,742.30 |
| PA CENTRAL | 14023347700 | 1424914 | WYLIE AVENUE REPLACEMENT PROJECT | 557 | LAY 40'-2"P | WYLIE | 125 | WAS | 2015 | \$17,576.80 | \$25,350.74 | \$900.90 |
| PA SOUTH | 14023351501 | 1529184 | ELLIOT GROUP | 559 | INSTALL 250'-6" PMLP | FOURTH ST | 129 | JEA | 2015 | \$122,269.88 | \$154,049.59 | \$3,307.20 |
| PA CENTRAL | 14023352901 | 1425449 | BOWER HILL ROAD REPLACEMENT PROJECT | 557 | INSTALL 2,060'-2"PMMP | BOWER HILL | 125 | VEN | 2015 | \$328,694.87 | \$162,037.11 | \$6,674.02 |
| PA CENTRAL | 14023353501 | 1425506 | STATE ROUTE 19 REPLACEMENT PROJECT | 557 | DB 12040'-2"PMP | SR 19 | 059 | WAY | 2017 | \$1,261,182.67 | \$1,256,699.41 | \$74,874.53 |
| PA CENTRAL | 14023353901 | 1425527 | ARCHER STREET REPLACEMENT PROJECT | 557 | LAY 60'-6"PMP | ARCHER | 125 | CAN | 2015 | \$104,891.42 | \$181,378.11 | \$33,692.13 |
| PA SOUTH | 14023356300 | 1532356 | CAROLINE ST | 559 | INSTALL 335' 4" PL-LP | CAROLINE ST | 129 | JEA | 2016 | \$24,521.76 | \$38,306.68 | \$3,750.00 |
| PA CENTRAL | 14023359400 | 1421561 | PIKE STREET REPLACEMENT PROJECT | 557 | LAY 780'-6"P | COUNTRY CLUB | 125 | MEA | 2015 | \$96,923.81 | \$143,810.07 | \$6,523.62 |
| PA SOUTH | 14023359900 | 1641550 | R-4230 | 559 | REPLACE C63068 AT R-4230 | | 125 | CHA | 2016 | \$6,490.01 | \$7,024.16 | |
| PA CENTRAL | 14023362800 | 1316597 | E MCMURRAY ROAD REPLACEMENT PROJECT | 557 | INSTALL 8,544'-2/4"6" PMMP | E MCMURRAY RD | 125 | MCM | 2016 | \$944,852.40 | \$943,033.57 | \$370,482.48 |
| PA SOUTH | 14023363400 | 1423509 | D-8535 YOUGH RIVER | 557 | PM - D-8535 YOUGH RIVER BORE | BIKE TRAIL | 051 | CON | 2015 | \$3,249,000.82 | \$3,047,933.72 | \$0.00 |
| PA CENTRAL | 14023366900 | 1426884 | COLLEGE STREET REPLACEMENT | 557 | INSTALL 700'-6"PLP | W COLLEGE ST | 125 | CAN | 2015 | \$179,063.01 | \$184,607.61 | \$129,791.79 |
| PA SOUTH | 14023367100 | 1426885 | 2321 - PITTSBURGH - REPL JO | 557 | INSTALL 772'-6"P & 64'-8" P | PITTSBURGH ST | 051 | UNI | 2015 | \$188,494.39 | \$321,068.34 | \$83,667.13 |
| PA SOUTH | 14023369300 | 1427221 | 2321 - PITTSBURGH - REPL JO | 557 | INSTALL 245'-4"&795'-6" PMLP | PITTSBURGH ST | 051 | UNI | 2016 | \$241,585.45 | \$258,405.87 | \$75,031.81 |
| PA SOUTH | 14023369500 | 1427224 | 2321 - DUFF - REPL JO | 557 | DIR DRILL 400'-10"CS-HP | D- 8500 | 051 | MCC | 2015 | \$245,293.06 | \$268,418.69 | |
| PA CENTRAL | 14023369800 | 1427238 | BECKER STREET REPLACEMENT PROJECT | 557 | LAY 795'-2"PMP | BECKER ST | 125 | HOU | 2015 | \$71,419.33 | \$46,223.55 | \$1,706.32 |
| PA SOUTH | 14023370700 | 1427368 | 2321 - WOOD - REPL JO | 557 | INSTALL 802'-2" P-MP | WOOD | 125 | MON | 2015 | \$16,466.34 | \$35,971.37 | \$8,318.14 |
| PA EAST | 14024232500 | 1420862 | MARKET STREET REPLACEMENT PROJECT | 557 | INST 1655' 4" & 80' 2" PMMP | E MARKET | 133 | YOR | 2015 | \$403,066.29 | \$346,562.69 | \$280,695.40 |
| PA EAST | 14024233600 | 1318872 | HALLAM BRIDGE | 559 | INST 172'-8" PMMP | SR 0462 | 133 | HEL | 2015 | \$46,198.31 | \$126,514.62 | \$2,171.16 |
| PA EAST | 14024233800 | 1318873 | | 559 | INST 153'-8" PMMP | SR 0462 | 133 | HEL | 2015 | \$45,872.31 | \$136,526.60 | \$1,574.58 |
| PA EAST | 14024234102 | 1420990 | WILSON AVE | 559 | INSTALL 220'-2" PMMP | 603 WILSON AV | 133 | HAN | 2019 | \$16,917.57 | \$22,947.89 | \$1,661.75 |
| PA EAST | 14024236200 | 1317267 | PM - VILLA VISTA - ORCHARD ACRES | 559 | INSTALL 2872'-4" PMMP; | ABBOTTSTOWN PK | 001 | HAN | 2015 | \$250,531.15 | \$130,812.40 | \$0.00 |
| PA EAST | 14024237300 | 1421417 | 300 W KING ST | 557 | INST 650'-2" PMMP | W KING ST | 133 | YOR | 2016 | \$144,736.45 | \$287,501.01 | \$240,624.23 |
| PA EAST | 14024238001 | 1421494 | FREDERICK ST PH 2 | 557 | INST 1670'-6" PMP;766'-4" PLP | FREDERICK ST | 133 | HAN | 2019 | \$877,710.30 | \$1,160,889.02 | \$649,092.92 |
| PA EAST | 14024238200 | 1421524 | 2421 - LINDEN - REPL JO | 557 | INSTALL 2853'-2" PMMP | LINDEN AV | 001 | HAN | 2018 | \$564,443.62 | \$597,754.81 | \$440,376.81 |
| PA EAST | 14024238601 | 1421543 | 2421 - HAINES - REPL JO | 557 | INST 2075' - 8" PMMP - PHASE 3 | HAINES RD | 133 | YOR | 2015 | \$548,169.12 | \$519,587.44 | \$8,300.25 |
| PA EAST | 14024239100 | 1421657 | 2421 - WINTER - REPL JO | 557 | INST 1420'-2" PMMP (OPNS CONC) | WINTER AV | 133 | GLE | 2015 | \$268,520.29 | \$220,048.49 | \$124,971.52 |
| PA EAST | 14024241200 | 1422005 | FOHL ST | 557 | INST 1990'-4" PIP | FOHL ST | 001 | ARE | 2015 | \$216,587.76 | \$340,568.82 | \$222,448.67 |
| PA EAST | 14024254400 | 1423295 | PIKE AL LEAK | 557 | INST -720'-2"PMMP ALONG PIKE | E PIKE AL | 027 | BEL | 2015 | \$140,070.10 | \$148,284.52 | \$57,499.73 |
| PA EAST | 14024259200 | 1423951 | ATHERTON ST PH1 | 557 | INST 4570'-6"-4"-2" PMMP | ATHERTON ST | 027 | STA | 2015 | \$1,533,962.91 | \$1,106,302.73 | \$745,061.03 |
| PA EAST | 14024259500 | 1319910 | ADMIRE DISTRICT STATION RELOCATION | 559 | INST 40' 2"CSHP & 825' 4"PMMP | BIESECKER RD | 133 | DOV | 2017 | \$228,882.02 | \$201,305.10 | \$58,226.17 |
| PA EAST | 14024265900 | 1424838 | 2421 - LOCUST - REPL JO | 557 | INST 2' SS | LOCUST | 133 | WRI | 2015 | \$6,552.72 | \$4,149.14 | \$541.80 |
| PA EAST | 14024267101 | 1425075 | FORRY AVE | 557 | INSTALL 4693'-2"& 4" PMMP | BAER AV | 133 | HAN | 2019 | \$880,926.63 | \$1,052,460.35 | \$408,035.78 |
| PA EAST | 14024268000 | 1425149 | FINEVIEW RD | 561 | INSTALL 800' - 2"PMP | FINEVIEW | 133 | YOR | 2015 | \$112,067.93 | \$108,108.12 | \$27,936.61 |
| PA EAST | 14024270400 | 1425431 | HAINES/WASHINGTON RELO | 561 | INSTALL 60'-6" PMMP PHASE 5 | HAINES RD | 133 | YOR | 2015 | \$37,434.70 | \$13,069.20 | \$0.00 |
| PA EAST | 14024270800 | 1425431 | HAINES/WASHINGTON RELO | 561 | INSTALL 90'-3" PMMP | RALEIGH DR | 133 | YOR | 2017 | \$25,275.70 | \$28,331.98 | \$122.64 |
| PA EAST | 14024271000 | 1425431 | HAINES/WASHINGTON RELO | 561 | INSTALL 980'-8" PMMP PHASE 5 | HAINES RD | 133 | YOR | 2015 | \$143,893.62 | \$134,874.56 | \$5,712.02 |
| PA EAST | 14024271400 | 1425335 | KINNEMAN RD | 561 | INSTALL 1713'-2" PMMP | KINNEMAN RD | 001 | ABB | 2015 | \$166,677.43 | \$102,356.35 | \$22,075.23 |
| PA EAST | 14024271800 | 1425564 | THACKSTON LN RELOCATE | 561 | RELOCATE 65'-2"PMMP | 331 THACKSTON LN | 133 | YOR | 2015 | \$11,848.11 | \$7,243.39 | \$0.00 |
| PA EAST | 14024272900 | 1425754 | INDIAN ROCK DAM RD RELOCATE | 561 | INST/RELOCATE 50'-2" PMMP | INDIAN ROCK DAM RD | 133 | YOR | 2015 | \$21,405.80 | \$18,619.58 | \$442.68 |
| PA EAST | 14024282200 | 1422042 | PM - D-1661 PHASE 1 | 557 | PM - D-1661 MAIN REPLACEMENT | FARMTRAIL | 133 | YOR | 2015 | \$2,525,772.00 | \$2,479,489.99 | \$71,177.97 |
| PA EAST | 14024283200 | 1427194 | 2421 - CENTER - REPL JO | 557 | INST 1,407'-2", 4', 6" PMLP AOP | 116 CENTER ST | 133 | HAN | 2016 | \$225,510.53 | \$293,569.94 | \$180,116.33 |
| PA EAST | 15021355700 | 1532151 | ECHO LN | 557 | INSTALL -330'-2" MAIN LINE | ECHO | 055 | FAY | 2016 | \$31,604.32 | \$41,533.49 | \$7,841.22 |
| PA EAST | 15021358700 | 1533216 | SHANNON DR S | 559 | INSTALL -75'-2" PMMP | SHANNON DR S | 055 | GRE | 2015 | \$4,685.37 | \$1,717.25 | |
| PA EAST | 15021359301 | 1533124 | ULTA BEAUTY | 561 | RELOCATE -150'-2" PMMP | 1320 LINCOLN WY E 6 | 055 | CHA | 2016 | \$3,772.80 | \$341.35 | |

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| PA NORTH | 15022716700 | 1527642 | 2231 - LINCOLN - REPL JO | 557 | INSTALL 550'-2" PMMP | LINCOLN RD | 003 | BRA | 2015 | \$55,150.23 | \$74,876.27 | \$25,023.61 |
| PA NORTH | 15022717300 | 1527694 | NIXON REGULATOR REPLACEMENT | 559 | INSTALL INLET/OUTLET R-4547 | GEORGETOWN RD | 007 | DAR | 2015 | \$15,785.79 | \$8,054.48 | |
| PA CENTRAL | 15022717501 | 1527707 | 2221 - HOLT - REPL JO | 557 | INSTALL 140' PMLP - LEAKAGE | 25 HOLT ST | 003 | PIT | 2015 | \$39,642.36 | \$72,262.14 | \$4,502.42 |
| PA NORTH | 15022719300 | 1527844 | 2239 - FOURTH - REPL JO | 557 | INSTALL -20'-4"PLP | FOURTH AV | 123 | WAR | 2015 | \$5,880.39 | \$7,135.71 | |
| PA CENTRAL | 15022719600 | 1527863 | RENNIE REPLACEMENT | 557 | INSTALL 1960' - 6", 4" PLP | RENNIE DR | 003 | PIT | 2016 | \$532,664.17 | \$388,277.18 | \$172,319.67 |
| PA NORTH | 15022719900 | 1527884 | SUMNER AV - NEW CASTLE | 557 | LAY 800'-2"PMMP - SUMNER AV | SUMNER | 073 | N-C | 2017 | \$145,846.26 | \$90,456.89 | \$7,649.05 |
| PA CENTRAL | 15022720100 | 1527896 | 2221 - WALNUT - REPL JO | 557 | REPLACE MAIN - LEAKAGE | WALNUT | 003 | PIT | 2015 | \$57,848.16 | \$104,478.64 | \$43,511.69 |
| PA NORTH | 15022720400 | 1529163 | BROWN ROAD REX ENERGY RELOCATION | 561 | RELOCATE 1415' OF 4" PM MP | BROWN RD | 019 | BUT | 2015 | \$98,809.19 | \$77,842.30 | |
| PA NORTH | 15022721100 | 1528032 | REGULATOR 3604 REPLACEMENT (R-4788) | 559 | INLET/OUTLET PIPE FOR R-4788 | COCHRAN DR | 007 | MON | 2016 | \$109,802.74 | \$79,951.67 | \$16,372.42 |
| PA NORTH | 15022723700 | 1528152 | HARDING ST - NEW CASTLE | 557 | DB-200'4"P&OC 600'4"PMLP | HARDING | 073 | N-C | 2015 | \$96,374.01 | \$79,963.31 | \$20,773.86 |
| PA CENTRAL | 15022728300 | 1528244 | HIGHGROVE REPLACEMENT | 557 | 3782'-4" PMMP, 749'-2"PMMP | HIGHGROVE RD | 003 | PIT | 2015 | \$789,881.94 | \$350,574.15 | \$112,072.36 |
| PA NORTH | 15022732602 | 1528290 | HOUSTON ST - REPL JO | 557 | LAY 980'-4"PMMP | HOUSTON | 019 | HAR | 2015 | \$83,068.18 | \$37,378.25 | \$5,236.00 |
| PA NORTH | 15022733600 | 1528307 | SR 1039 BETTERMENT | 559 | INSTALL 560' OF 4" PLP | SR 1039 | 007 | ROC | 2015 | \$71,053.84 | \$58,216.61 | \$3,711.43 |
| PA CENTRAL | 15022733800 | 1528310 | WINDVALE DRIVE REPLACEMENT PROJECT | 557 | INSTALL 2,030'-6" PMLP | WINDVALE | 003 | PIT | 2015 | \$158,562.07 | \$386,388.05 | \$109,150.22 |
| PA NORTH | 15022735000 | 1528376 | D-5208 PARKER REPLACEMENT | 557 | INSTALL 565'-2" PM MP | D-5208 | 005 | PAR | 2015 | \$59,148.82 | \$53,035.11 | \$13,440.53 |
| PA NORTH | 15022735401 | 1528399 | SR 2014 BRIDGE REPLACEMENT | 561 | D-BORE 4" LINE FOR NEW BRIDGE | S.R. 2014 | 073 | WAM | 2017 | \$87,255.57 | \$126,768.33 | \$732.79 |
| PA NORTH | 15022735600 | 1528400 | 2231 - MCCLELLAND - REPL JO | 557 | INSTALL 1370' - 4" PMMP | MCCLELLAND | 073 | N-C | 2015 | \$103,001.23 | \$158,414.28 | \$38,757.16 |
| PA NORTH | 15022736700 | 1528516 | ROSE STOP @SR 65 CULVERT CROSSING | 557 | DB 250' -4"PMMP ROSE STOP | ROSE STOP | 073 | N-C | 2015 | \$39,370.11 | \$81,247.75 | \$6,617.00 |
| PA NORTH | 15022737502 | 1528521 | LINE AVE R-2960 REPLACEMENT | 559 | INLET/OUTLET PIPE FOR R-2960 | LINE | 073 | ELL | 2016 | \$421,222.34 | \$452,549.42 | |
| PA NORTH | 15022737700 | 1528524 | LOCUST ST - NEW GALILEE(CULVERT REPL) | 561 | D-BORE 300'-4"PMMP | LOCUST ST | 007 | N-G | 2015 | \$36,550.68 | \$18,566.98 | |
| PA CENTRAL | 15022738000 | 1528530 | 2221 - ISLAND - REPL JO | 557 | INSTALL 208' 6" PLASTIC ML | 512 ISLAND AV | 003 | MCK | 2015 | \$41,165.10 | \$41,865.97 | \$22,399.29 |
| PA NORTH | 15022738200 | 1528562 | 2231 - D-19 - REPL JO | 557 | INSERT 1650'-4" PIP | D-19 | 007 | BVR | 2015 | \$142,655.80 | \$193,770.40 | \$16,223.44 |
| PA NORTH | 15022741600 | 1528705 | 2231 - FRANCES - REPL JO | 557 | INSTALL 459' - 6" PMLP | FRANCES ST | 007 | ELL | 2016 | \$66,225.30 | \$225,882.51 | \$58,741.00 |
| PA CENTRAL | 15022742800 | 1528747 | COCHRAN ROAD REPLACEMENT PROJECT | 557 | INSTALL 415'-8" PMLP | COCHRAN RD | 003 | PIT | 2016 | \$194,664.38 | \$231,816.67 | \$39,119.81 |
| PA NORTH | 15022743000 | 1104321 | PM - D-1399 REPLACEMENT | 557 | PM-D-1399 REPLACEMENT | ATLANTIC | 073 | N-C | 2016 | \$1,700,000.00 | \$1,787,563.11 | |
| PA CENTRAL | 15022743400 | 1528760 | 2221 - ROSCOE - REPL JO | 557 | INSTALL 515'-2"PLP | ROSCOE ST | 003 | PIT | 2015 | \$157,172.08 | \$206,062.92 | \$132,726.86 |
| PA NORTH | 15022743600 | 1528764 | 2231-MARION & DEXTER- ELLWOOD CITY | 557 | OC 400'-2"PM MARION AV/ ELL | 909 MARION AV | 007 | ELL | 2016 | \$52,832.11 | \$24,575.88 | \$5,870.00 |
| PA NORTH | 15022744001 | 1528808 | ROUTE 30 REPLACEMENT JOB | 559 | INSTALL 1245'-6"/440'-2" PMMP | ROUTE 30 | 003 | CLI | 2015 | \$241,519.79 | \$287,512.56 | \$34,143.51 |
| PA NORTH | 15022744200 | 1104326 | D-1601 PHASE III | 557 | PM - D-1601 PH.3 REPLACEMENT | CLELAND MILL | 073 | N-C | 2015 | \$1,435,000.00 | \$1,547,069.32 | \$17,953.62 |
| PA NORTH | 15022745300 | 1528861 | 2234 - A - REPL JO | 557 | INSTALL 40'-2", 45'-1.25" PLMP | WALKER FLATS ROAD | 005 | HAW | 2015 | \$17,022.45 | \$567.18 | |
| PA CENTRAL | 15022746300 | 1528903 | 2221 - MCMONAGLE - REPL JO | 557 | REPLACE 500' 8" PL ML | MCMONAGLE RD | 003 | PIT | 2015 | \$163,705.47 | \$127,947.55 | \$65,399.67 |
| PA CENTRAL | 15022746601 | 1528910 | ALTOONA PLACE REPLACEMENT PROJECT | 557 | INSTALL 1,320'-2", 50'-4" PMMP | ALTOONA | 003 | PIT | 2015 | \$448,079.26 | \$550,350.28 | \$4,563.00 |
| PA NORTH | 15022747700 | 1528962 | 2231 - SEMPLE - REPL JO | 557 | INSERT 125'-2" 10'-4" PLP | SEMPLE AV | 003 | PIT | 2015 | \$6,806.42 | \$11,312.97 | \$6,804.00 |
| PA NORTH | 15022748000 | 1425544 | PM-D-1869 BIG BEAVER WEST REPLACEMENT | 559 | PM - D-1869 BIG BEAVER WEST | WALLACE RUN RD | 007 | BEA | 2017 | \$1,829,999.00 | \$2,509,763.72 | |
| PA NORTH | 15022748200 | 1528936 | PM-D-1869 BIG BEAVER EAST REPLACEMENT | 559 | PM D-1869 BIG BEAVER EAST INST | WALLACE RUN RD | 007 | BEA | 2016 | \$2,099,999.00 | \$1,958,867.59 | \$31,383.71 |
| PA NORTH | 15022748800 | 1529037 | 316 MERCER RD - ELLWOOD CITY | 559 | OC 265'-2"PM-316 MERCER RD | 316 MERCER RD | 073 | ELL | 2015 | \$26,523.31 | \$22,175.00 | \$2,078.24 |
| PA CENTRAL | 15022749000 | 1529071 | 2221 - SENECA - REPL JO | 557 | INSTALL 40 FT-6" PLP | SENECA | 003 | PIT | 2015 | \$8,456.27 | \$22,500.25 | \$2,390.40 |
| PA CENTRAL | 15022749300 | 1529076 | 2221 - EUREKA - REPL JO | 557 | 1NSTALL 10 FT-4 PL | EUREKA ST | 003 | PIT | 2015 | \$8,608.23 | \$2,493.82 | \$0.00 |
| PA NORTH | 15022749500 | 1529077 | 4152 BRODHEAD ROAD | 557 | INSERT 200' OF 1.25" PMP | 4152 BRODHEAD RD | 007 | MON | 2015 | \$12,261.49 | \$14,354.01 | \$6,650.00 |
| PA NORTH | 15022749700 | 1527628 | BESSEMER BRIDGE ABANDONMENT | 561 | INSTALL 110' - 4' PM LP | SR 317 | 073 | BES | 2015 | \$56,740.59 | \$8,138.22 | \$4,258.16 |
| PA NORTH | 15022750000 | 1529122 | W STATE ST BETTERMENT | 559 | INSTALL 3000' OF 6" PMMP | W STATE ST | 073 | N-C | 2016 | \$429,554.38 | \$358,476.01 | \$93,418.33 |
| PA NORTH | 15022750600 | 1529208 | MERCER RD- WNTER OPERATIONS | 559 | 3300-6"P/OC 225'-4"P/100'-2" | MERCER RD WINT OP | 073 | N-C | 2017 | \$818,726.95 | \$683,848.87 | \$141,487.14 |
| PA NORTH | 15022751000 | 1529238 | NORTH GATE BETTERMENT | 559 | LAY 1100'-6"/25'-4"/230'-2"P | NORTH GATE | 003 | WAR | 2015 | \$284,427.01 | \$296,459.99 | \$223,652.50 |
| PA CENTRAL | 15022751500 | 1529261 | 2221 - YOUNG - REPL JO | 557 | INSTALL 140' 2" PL ML | LEONARD | 003 | MCK | 2015 | \$19,690.45 | \$8,077.50 | \$3,814.06 |
| PA NORTH | 15022751700 | 1529323 | FREEDOM ROAD RELOCATION | 561 | FREEDOM RD RELOCATE CRANBERRY | FREEDOM RD | 019 | CRA | 2016 | \$113,792.29 | \$130,637.55 | \$3,363.41 |
| PA CENTRAL | 15022752200 | 1529286 | 2221 - MCMONAGLE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MCMONAGLE | 003 | PIT | 2015 | \$12,742.84 | \$15,714.58 | |
| PA NORTH | 15022752500 | 1529297 | INSTALL ST REPLACEMENT | 557 | INSTALL 2955' OF PLP | FIRST ST | 073 | ELL | 2016 | \$209,992.59 | \$113,168.31 | \$47,457.60 |
| PA CENTRAL | 15022752700 | 1529301 | 2221 - BERKSHIRE - REPL JO | 557 | INSERT 140' 2" PL ML | BERKSHIRE | 003 | PIT | 2015 | \$15,282.34 | \$16,998.61 | \$3,942.86 |
| PA NORTH | 15022752900 | 1529302 | WALKER FLATS ROAD | 557 | D-BORE 340'-2" PM MP | WALKER FLATS RD | 005 | HAW | 2015 | \$69,224.69 | \$107,023.27 | \$4,249.00 |
| PA CENTRAL | 15022753500 | 1529350 | 2221 - DE ARMENT - REPL JO | 557 | INSTALL 20 FT-6" PIP | DE ARMENT | 003 | PIT | 2015 | \$25,226.50 | \$13,231.16 | \$491.40 |
| PA NORTH | 15022755400 | 1426850 | GIBSON ST BRIDGE PROJECT | 561 | INSTALL 350'-4" PLP | GIBSON ST | 003 | PIT | 2015 | \$66,044.47 | \$81,959.56 | |
| PA NORTH | 15022755900 | 1529443 | RENO ST | 557 | INSTALL 520-4" PMLP | RENO ST | 007 | ROC | 2015 | \$86,615.38 | \$125,018.59 | \$63,533.72 |
| PA CENTRAL | 15022756300 | 1529468 | 2221 - BERNARD - REPL JO | 557 | INSTALL 6' 4" PL ML | 2312 BERNARD ST | 003 | PIT | 2015 | \$8,588.88 | \$8,184.60 | \$2,867.24 |
| PA NORTH | 15022758400 | 1529486 | 2231 - CREEK - REPL JO | 557 | INSTALL 85' - 1.25" PM IP | CREEK DR | 019 | SLI | 2015 | \$3,797.31 | \$347.09 | \$29.70 |
| PA NORTH | 15022759500 | 1528562 | 2231 - D-19 - REPL JO | 559 | LAY 300'-4" PIP | ELMBROOK RD | 007 | BVR | 2015 | \$24,831.81 | \$35,795.78 | \$5,462.50 |
| PA NORTH | 15022759700 | 1529127 | R3576 REPLACEMENT | 559 | INSTALL MAIN FOR R4789 | RAILROAD ST | 007 | ROC | 2015 | \$51,990.47 | \$55,323.67 | \$2,611.05 |
| PA NORTH | 15022761900 | 1529651 | 2231 - MAHONEY - REPL JO | 557 | INSTALL 550' - 4" PMLP | 4TH ST | 073 | ELL | 2015 | \$66,391.15 | \$106,823.67 | \$29,330.22 |
| PA CENTRAL | 15022762400 | 1317065 | BELL AVE - REPLACEMENT PROJECT | 559 | LAY OULET R3458 40'8P PERRY ST | MULBERRY AV | 003 | MCK | 2015 | \$76,226.16 | \$90,085.30 | \$798.66 |

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|------------|-------------|---------|---------------------------------------|-----|---------------------------------|------------------------|-----|-----|------|----------------|----------------|----------------|
| PA NORTH | 15022763601 | 1427246 | TANK ALLEY REG | 559 | IN/OUT PIPE FOR NEW REG4786 | TANK | 007 | BVR | 2016 | \$99,644.37 | \$117,547.45 | \$0.00 |
| PA CENTRAL | 15022764100 | 1529734 | 2221 - HILLCREST - REPL JO | 557 | INSTALL 12' 6" PLASTIC ML | HILLCREST | 003 | BET | 2015 | \$13,707.73 | \$9,365.12 | \$1,393.95 |
| PA CENTRAL | 15022764600 | 1529827 | MISSIONARY REPLACEMENT PROJECT | 557 | INSTALL 386' 2" & 793'4" PMLP | MISSIONARY | 003 | PIT | 2015 | \$154,353.81 | \$119,426.83 | \$6,211.80 |
| PA CENTRAL | 15022765200 | 1529848 | RALSTON PLACE MP PROJECT | 557 | INST 755'PMMP UPRATE 341'PMLP | RALSTON | 003 | PIT | 2015 | \$227,531.05 | \$222,191.15 | \$94,448.82 |
| PA NORTH | 15022769700 | 1528896 | CANYON & LOCUST ST- NEW CASTLE | 561 | LAY 50'-3"P IN 4'C | CANYON ST | 073 | N-C | 2015 | \$32,161.42 | \$18,328.24 | |
| PA CENTRAL | 15022770100 | 1528910 | ALTOONA PLACE REPLACEMENT PROJECT | 557 | INSTALL 250-LF PMLP - LEAKAGE | 480 MAPLETON ST | 003 | PIT | 2015 | \$23,019.61 | \$18,827.42 | \$0.00 |
| PA CENTRAL | 15022770500 | 1530136 | 2221 - MARGARETTA - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MARGARETTA | 003 | PIT | 2015 | \$72,214.18 | \$85,791.02 | \$39,278.02 |
| PA NORTH | 15022770800 | 1530153 | -81 R/W STATE GAME LANDS & FOX CHASE | 557 | INSTALL APPROX 1900'-8"PHHP | D-81 R/W | 003 | WEX | 2016 | \$608,890.83 | \$478,899.76 | |
| PA NORTH | 15022771001 | 1530155 | D-81 R/W NORTH RIDGE & PEARCE MILL | 557 | INSTALL 4000'OF 6" PMP | D-81 R/W | 003 | WEX | 2017 | \$631,349.74 | \$1,192,195.40 | \$121,331.73 |
| PA NORTH | 15022771202 | 1530158 | WHITE OAK | 557 | INSTALL APPROX 150'-8" HP | WHITE OAK ST | 007 | FRE | 2017 | \$90,636.20 | \$161,124.59 | \$0.00 |
| PA CENTRAL | 15022771400 | 1530172 | 2221 - MCRROBERTS - REPL JO | 557 | INSTALL 350 FT-4" PHHP | HAMILTON/MCROBERTS RDS | 003 | PIT | 2015 | \$49,875.53 | \$30,076.47 | \$566.95 |
| PA NORTH | 15022771601 | 1530185 | 2231 - FOREST - REPL JO | 557 | INSTALL 1200' OF 6" PLP | FOREST AV | 003 | PIT | 2016 | \$448,223.63 | \$292,718.18 | \$187,423.80 |
| PA NORTH | 15022771800 | 1530194 | THORN HOLLOW - CROSS BORE | 559 | THORN HOLLOW - CROSS BORE | THORN HOLLOW RD | 003 | PIT | 2015 | \$21,882.81 | \$15,281.09 | \$2,256.96 |
| PA NORTH | 15022772100 | 1530229 | 2231 - SWINDERMAN - RELOC. JO | 561 | RELOCATE 120'-2" | SWINDERMAN RD | 003 | WEX | 2015 | \$14,092.87 | \$7,730.33 | |
| PA NORTH | 15022773300 | 1530409 | FOURTH AVE, WARREN REPLACEMENT | 557 | INSTALL 3497 FT OF PLASTIC | FOURTH | 123 | WAR | 2016 | \$385,132.49 | \$425,939.83 | \$275,183.57 |
| PA NORTH | 15022774001 | 1529658 | MERRIMAN RD - SYS 37022013 BETTERMENT | 559 | LAY 400'-2" & 5150'-6" PMMP | MERRIMAN RD | 003 | SEW | 2015 | \$457,856.59 | \$568,832.46 | \$232,378.79 |
| PA NORTH | 15022776700 | 1530699 | PLUMER AVE RELOCATION | 561 | INSTALL 20' 4" PLP | PLUMER AV | 003 | PIT | 2015 | \$10,313.23 | \$16,102.42 | \$6,600.00 |
| PA CENTRAL | 15022777400 | 1530752 | 2221 - CHAPEL - REPL JO | 557 | INSTALL 140 FT-4" PLP | CHAPEL | 003 | BET | 2015 | \$14,196.02 | \$14,539.78 | |
| PA NORTH | 15022778000 | 1530770 | ELCO DR REPLACEMENT PROJECT | 557 | INSTALL 715' OF 2" PMMP | ELCO DR | 003 | COR | 2016 | \$93,431.06 | \$117,890.21 | \$39,657.96 |
| PA NORTH | 15022778200 | 1530774 | 2231 - TEVEBAUGH HOLLOW - REPL JO | 557 | INSERT 205'-1 1/4" PMMP | TEVEBAUGH HOLLOW RD | 007 | FRE | 2015 | \$27,883.18 | \$13,160.77 | \$10,966.92 |
| PA NORTH | 15022779501 | 1530835 | SR66 HIGHLAND TOWNSHIP REPLACEMENT | 557 | INST 1435' - 2" PM-MP | SR66 | 047 | DE | 2015 | \$90,806.57 | \$61,799.08 | |
| PA NORTH | 15022780200 | 1530845 | TEMPLE AVE REPLACEMENT PROJECT | 557 | INSTALL 867' OF 4" PLP | TEMPLE AV | 073 | N-C | 2015 | \$157,628.95 | \$154,839.74 | \$85,200.02 |
| PA NORTH | 15022781400 | 1530886 | CHURCH STREET - ECONOMY AMRP | 557 | INSTALL 7,190' OF 2" 4" 8" P | CHURCH ST | 007 | AMB | 2017 | \$1,468,680.44 | \$1,789,525.22 | \$1,297,696.51 |
| PA NORTH | 15022781800 | 1530918 | HARRISON AVE REPLACEMENT PROJECT | 557 | INSTALL 1040' 4" PMMP | N HARRISON AV | 003 | PIT | 2019 | \$319,449.03 | \$282,955.89 | \$171,895.75 |
| PA NORTH | 15022782000 | 1530922 | BARTLEY RD EXT. | 559 | INST 30'-2"PMMP | BARTLEY RD | 031 | PAR | 2015 | \$8,699.14 | \$3,843.83 | |
| PA CENTRAL | 15022782500 | 1530951 | 2221 - JANE - REPL JO | 557 | INSTALL 80'-8" PMLP | JANE & 21ST | 003 | PIT | 2015 | \$34,634.42 | \$230,011.27 | \$163,352.82 |
| PA CENTRAL | 15022783100 | 1530960 | 2221 - FREDERICK - REPL JO | 557 | INSTALL 10'-4" PMLP | FREDERICK AV | 003 | PIT | 2015 | \$10,536.72 | \$13,645.26 | \$7,784.23 |
| PA CENTRAL | 15022783300 | 1530962 | 2221 - STREETS RUN - REPL JO | 557 | INSTALL 10'-6" PMLP | STREETS RUN | 003 | PIT | 2015 | \$21,352.31 | \$79,330.83 | \$28,749.35 |
| PA NORTH | 15022783600 | | | 561 | OC 20'-2" - FOR NEW TAP | 413 2ND ST | 073 | ELL | 2016 | \$1,692.30 | \$728.06 | |
| PA NORTH | 15022784800 | 1531119 | 2231 - PENNSYLVANIA - REPL JO | 557 | INSTALL 15'-2" PLP | PENNSYLVANIA | 007 | MON | 2015 | \$11,044.61 | \$2,933.79 | \$1,860.00 |
| PA NORTH | 15022785000 | 1531142 | HARBOR STREET REPLACEMENT | 557 | INSTALL 2000'- 2 & 4" PMLP | HARBOR | 073 | N-C | 2016 | \$225,920.64 | \$213,508.24 | \$84,111.95 |
| PA NORTH | 15022785301 | 1531048 | PINE CREEK RELOCATION | 561 | PINECREEK RELOCATION/1800'-6"P | PINE CREEK SR4086 | 003 | WEX | 2016 | \$304,109.00 | \$346,480.09 | \$28,294.97 |
| PA NORTH | 15022785600 | 1531195 | 2238 - SOUTH - REPL JO | 557 | VOID IF NOT NEEDED | SOUTH | 083 | BRA | 2016 | \$7,574.70 | \$2,897.11 | \$971.20 |
| PA NORTH | 15022785900 | 1531199 | WENTLINGS CORNERS ROD REPLACEMENT | 557 | 740'-2" PM MP | WENTLING CORNER RD | 031 | KNO | 2015 | \$62,769.41 | \$54,030.99 | \$440.00 |
| PA CENTRAL | 15022786100 | 1531237 | 2221 - CEDAR - REPL JO | 557 | INST 699'-4PLP | CEDAR BV | 003 | PIT | 2015 | \$158,106.60 | \$184,840.65 | \$78,126.30 |
| PA NORTH | 15022786400 | 1531242 | GLENWOOD ROAD - REPLACEMENT PROJECT | 557 | 840'-4" PMMP ACT COR 06/30/17 | GLENWOOD | 007 | AMB | 2017 | \$253,808.11 | \$260,233.31 | \$202,200.35 |
| PA NORTH | 15022787000 | 1531269 | 2231 - FOREST GROVE - REPL JO | 557 | INSTALL 950' - 2" PMP | FOREST GROVE RD | 003 | COR | 2016 | \$177,255.96 | \$404,284.42 | \$325,638.59 |
| PA NORTH | 15022787200 | 1531302 | KEYSTONE WAY | 559 | INSTALL 120' 2" PMLP LINE EXTN | KEYSTONE WY | 073 | ELL | 2015 | \$20,532.64 | \$58,800.59 | \$45.00 |
| PA CENTRAL | 15022787500 | 1531317 | SARATOGA DRIVE REPLACEMENT PROJECT | 557 | INSTALL 430'-8" & 1170'-6" PMLP | SARATOGA DR | 003 | PIT | 2016 | \$320,201.81 | \$337,943.67 | \$123,296.31 |
| PA NORTH | 15022787900 | 1531323 | 2231 - FOWLER - REPL JO | 557 | REPLACE MAIN - LEAKAGE | FOWLER RD | 003 | WEX | 2015 | \$2,693.68 | \$0.00 | |
| PA NORTH | 15022788101 | 1531362 | SR6 MAIN LINE RELOCATION | 561 | INSTALL 350'-2"P/30'-4"CS | STATE ROUTE 6 | 123 | WAR | 2015 | \$65,391.45 | \$56,074.44 | \$728.40 |
| PA NORTH | 15022788300 | 1531374 | MAIN STREET REPLACEMENT | 557 | 650'-4" PM LP,420'-2" PM LP | MAIN ST | 065 | SUM | 2016 | \$88,439.93 | \$80,555.18 | \$12,722.72 |
| PA NORTH | 15022788500 | 1531377 | PARKWAY LANE REPLACEMENT | 557 | INST 2920'-4"PMLP | PARKWAY LN | 083 | BRA | 2018 | \$226,623.58 | \$391,104.65 | \$74,704.46 |
| PA NORTH | 15022788900 | 1531379 | 2231 - LYNDALE - REPL JO | 557 | LAY 20'-4"PM | LYNDALL | 073 | N-C | 2015 | \$11,152.45 | \$12,005.44 | \$997.50 |
| PA NORTH | 15022789200 | 1531401 | APPLEWOOD LN MAIN IMPROVEMENT | 559 | INSTALL 280" 2" PHHP | APPLEWOOD LN | 073 | WAM | 2015 | \$20,229.50 | \$27,053.53 | \$11,877.66 |
| PA NORTH | 15022789400 | 1531408 | NINEVAH ROAD REPLACEMENT | 557 | 1600'-4" PM MP, 10'-3" PM MP | NINEVAH | 031 | KNO | 2015 | \$112,822.81 | \$135,716.76 | \$0.00 |
| PA NORTH | 15022791100 | 1531549 | REGULATOR 157 REPLACEMENT (R-4792) | 559 | IN/OUT PIPING FOR R-157 | CHERRY | 073 | N-C | 2016 | \$98,767.18 | \$76,210.19 | \$15,100.00 |
| PA NORTH | 15022791900 | 1531553 | BIG SEWICKLEY CREEK ROAD REPLACEMENT | 557 | INSTALL 4244' OF 4" & 2" PMMP | BIG SEWICKLEY CREEK RD | 003 | SEW | 2019 | \$704,056.55 | \$714,646.82 | \$135,111.50 |
| PA NORTH | 15022792500 | 1531593 | BOYERS REPLACEMENT PROJECT | 557 | 1745'-4" PM MP & 1190'-2" PMMP | STATION ST | 019 | BOY | 2019 | \$404,547.86 | \$465,976.94 | \$121,355.77 |
| PA CENTRAL | 15022793200 | 1531620 | COOKE DRIVE REPLACEMENT PROJECT | 557 | INSERT 255'-4" PMLP INTO 6" BS | COOKE DR | 003 | PIT | 2016 | \$24,084.06 | \$40,711.89 | \$4,563.96 |
| PA NORTH | 15022793802 | 1531643 | D-22 AT FORRESTVILLE ROAD REPLACEMENT | 557 | 1770'-2",3770'-8",35'-6" HD PL | FORRESTVILLE RD | 019 | SLI | 2017 | \$610,827.02 | \$680,709.22 | \$10,038.71 |
| PA NORTH | 15022794100 | 1531659 | WEST WASHINGTON AND GRANDVIEW -(N-C) | 557 | OC 150'-6"/20'-4"PMLP | W WASHINGTON | 073 | N-C | 2016 | \$64,588.10 | \$62,963.22 | \$14,534.05 |
| PA NORTH | 15022794600 | 1531704 | MAIN ST RIMERSBURG REPLACEMENT | 557 | 850'-4"PM LP | MAIN | 031 | RIM | 2016 | \$157,736.28 | \$374,613.13 | \$143,949.90 |
| PA NORTH | 15022794800 | 1531708 | D-5181 REPLACEMENT AT RANKING ROAD | 557 | 2050'-6" PM MP, 10'-6" CS MP | D-5181 | 031 | RIM | 2016 | \$198,816.06 | \$175,880.35 | |
| PA NORTH | 15022795500 | 1531761 | BATES ROAD REPLACEMENT PROJECT | 557 | INSTALL 1645'-4" PMLP | BATES RD | 083 | BRA | 2015 | \$116,241.18 | \$92,225.77 | \$24,539.49 |
| PA CENTRAL | 15022796800 | 1531851 | 2221 - MAPLE HILL - REPL JO | 557 | INSTALL 93' 4" PLASTIC ML | MAPLE HILL | 003 | PIT | 2015 | \$42,772.81 | \$17,714.66 | \$409.20 |
| PA NORTH | 15022797400 | 1529365 | RENO STREET BETTERMENT | 559 | INSTALL 1650'-4" PMIP | RENO ST | 007 | ROC | 2016 | \$197,052.67 | \$148,450.84 | \$51,055.24 |
| PA CENTRAL | 15022798701 | 1531918 | WASSON REPLACEMENT PROJECT | 557 | INSTALL 1300'-2" PMP | WASSON | 003 | PIT | 2018 | \$361,660.86 | \$520,556.98 | \$0.00 |

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| PA NORTH | 15022799400 | 1531960 | 2231 - JACKS RUN - REPL JO | 557 | INSERT 70'-3" PLP | JACKS RUN RD | 003 | PIT | 2015 | \$21,293.29 | \$13,599.60 | \$7,638.80 |
| PA NORTH | 15022799701 | 1531981 | BRICKYARD RD RELOCATION PROJECT | 561 | INSTALL 1,010'2"84"PMIP | BRICKYARD RD | 007 | N-B | 2019 | \$100,084.95 | \$171,444.40 | \$838.17 |
| PA NORTH | 15022799900 | 1531989 | KNOX AMRP PHASE 2 | 557 | 3500'-4"PM MP, 3360'-2"PM MP | ROUTE 208 | 031 | KNO | 2016 | \$821,664.75 | \$895,434.52 | \$327,931.34 |
| PA CENTRAL | 15022801400 | 1532093 | 2221 - OVERLOOK - REPL JO | 557 | INSTALL 5' 6" PLASTIC ML | 37 OVERLOOK DR | 003 | PIT | 2015 | \$10,633.25 | \$8,796.57 | \$222.44 |
| PA NORTH | 15022801600 | 1532101 | 2238 - CORWIN - REPL JO | 557 | INSTALL 1,030'-6"PMMP | CORWIN LN | 083 | BRA | 2015 | \$109,128.51 | \$65,749.89 | \$3,808.33 |
| PA CENTRAL | 15022802800 | 1532228 | 2221 - RECHTENWALD - REPL JO | 557 | INSERT 160' 2" PLASTIC ML | 630 RECHTENWALD ST | 003 | PIT | 2015 | \$65,550.59 | \$62,222.32 | \$0.00 |
| PA NORTH | 15022803600 | 1532312 | 320 BRADFORD DR | 561 | RELOCATE 150'-4" PMMP | 320 BRADFORD DR | 003 | WEX | 2015 | \$7,293.29 | \$1,620.55 | |
| PA CENTRAL | 15022803800 | 1532317 | 2221 - HIGHVIEW - REPL JO | 557 | REPLACE 20' 4" PLASTIC | 600 HIGHVIEW RD | 003 | PIT | 2015 | \$33,745.59 | \$20,835.47 | \$3,004.70 |
| PA NORTH | 15022804200 | 1532322 | LORANA AVENUE REPLACEMENT PROJECT | 557 | INSTALL 388'-6" PMMP MAIN | LORANA AV | 083 | BRA | 2015 | \$67,913.57 | \$50,239.52 | \$0.00 |
| PA NORTH | 15022805501 | 1532349 | SACK LANE & WOODBURY ROAD | 557 | 5400'-2" P-MP | SACK LN | 019 | BOY | 2017 | \$315,030.83 | \$272,681.98 | \$4,231.73 |
| PA NORTH | 15022806000 | 1529256 | 2231 - HARMONY - REPL JO | 559 | INSTALL 80'-2" PHHP | SR 0019 | 003 | WEX | 2015 | \$9,586.97 | \$7,508.20 | |
| PA CENTRAL | 15022806400 | 1532419 | SAW MILL RUN RELOCATION | 557 | INSTALL 15'-6" PMLP | SAW MILL RUN BV | 003 | PIT | 2015 | \$8,259.97 | \$11,523.93 | |
| PA CENTRAL | 15022806700 | 1532426 | 2221 - WINDERMERE - REPL JO | 557 | INSTALL 12' 6" PL ML | WINDERMERE AV | 003 | PIT | 2015 | \$7,636.14 | \$8,990.84 | \$2,890.80 |
| PA NORTH | 15022806900 | 1532433 | E HAZELCROFT AVE REPLACEMENT | 557 | INSTALL 3000'2' 4" 8" 6" PMMP | W HAZELCROFT AV | 073 | N-C | 2017 | \$500,372.36 | \$431,206.25 | \$149,841.29 |
| PA CENTRAL | 15022807200 | 1532443 | 2221 - SALEM - REPL JO | 557 | INSTALL 30' 6" PL ML | 475 SALEM DR | 003 | PIT | 2015 | \$10,680.87 | \$6,369.63 | \$1,243.00 |
| PA NORTH | 15022807500 | 1532455 | GLEN AV REPLACEMENT & 5TH ST PVT | 557 | OC 2014'-4" & 6" PMMP | GLEN | 073 | ELL | 2017 | \$373,116.44 | \$403,761.58 | \$213,559.33 |
| PA NORTH | 15022807800 | 1532458 | MT JACKSON REPLACEMENT PROJECT | 557 | OC -2290'-2" & 4" PMIP | MT JACKSON | 073 | N-C | 2016 | \$219,021.61 | \$295,511.70 | \$50,471.02 |
| PA NORTH | 15022808001 | 1532462 | REYNOLDS ST REPLACEMENT | 557 | OC -2400'-4" PMLP | REYNOLDS | 073 | N-C | 2017 | \$613,968.80 | \$580,254.11 | \$374,136.20 |
| PA NORTH | 15022808400 | 1532489 | 2238 - CHAUTAUQUA AREA AMRP | 557 | 600'-6LP 250'-4LP 1625'-2/4"MP | CHAUTAUQUA PL | 083 | BRA | 2016 | \$450,654.92 | \$382,535.17 | \$360,349.98 |
| PA NORTH | 15022808601 | 1532490 | SUMMER ST AREA REPLACEMENT | 557 | 1,860'-2"PMMP, 2,700'-4"PMMP | SUMMER ST | 083 | BRA | 2016 | \$388,619.42 | \$440,015.54 | \$237,392.73 |
| PA NORTH | 15022808800 | 1532493 | SOUTH AVENUE REPLACEMENT | 557 | INST. 2,215'-4" PMLP | SOUTH AV | 083 | BRA | 2017 | \$339,323.97 | \$490,695.56 | \$460,515.05 |
| PA NORTH | 15022809000 | 1532494 | 2238 - INTERSTATE AND SCHOOL ST | 557 | INSTALL 250'-6"LP, 400'-4"LP | INTERSTATE | 083 | BRA | 2016 | \$110,907.64 | \$110,746.00 | \$48,881.72 |
| PA NORTH | 15022809700 | 1529238 | NORTH GATE BETTERMENT | 559 | INSTALL 1'-4" S | SLADE RD | 003 | WAR | 2015 | \$2,411.72 | \$3,133.63 | |
| PA NORTH | 15022809900 | 1532578 | GASS ROAD - REPLACEMENT PROJECT | 557 | INSTALL 2480'-4/35'-2" PMMP | GASS | 003 | PIT | 2019 | \$507,375.93 | \$638,200.72 | \$279,634.06 |
| PA NORTH | 15022811100 | 1532661 | CANYON @ LOCUST ST | 557 | LAY 1200'-2"PMMP- CANYON ST | CANYON | 073 | N-C | 2015 | \$128,712.93 | \$59,204.73 | \$7,091.03 |
| PA NORTH | 15022812701 | 1532706 | SPRUCE COURT & BUTTERNUT COURT | 557 | 4,040'-2" PM MP | SPRUCE CT | 123 | WAR | 2017 | \$172,328.31 | \$158,325.23 | |
| PA NORTH | 15022813300 | 1532716 | PITTSVILLE ROAD ROCKLAND TWP | 557 | 2200'-2" PM MP | PITTSVILLE | 121 | KEN | 2016 | \$155,352.63 | \$145,667.66 | \$17,912.41 |
| PA NORTH | 15022813500 | 1532728 | BEECH STREET AREA REPLACEMENT | 557 | 1355'-4" PMMP, 3870'-2" PMLP | BEECH ST | 123 | WAR | 2017 | \$535,983.69 | \$647,359.37 | \$186,070.91 |
| PA NORTH | 15022813700 | 1532732 | FULLER AVENUE BTWN SR 3005 & ARCH ST | 557 | INST 575'-2" PMP,55'-4"83" PMP | FULLER AV | 123 | WAR | 2016 | \$56,807.71 | \$37,782.39 | \$14,554.70 |
| PA NORTH | 15022814100 | 1532735 | CIRCLE DR LP REPLACEMENT | 557 | OC 1218'-2" & DB 710'-2" PMMP | CIRCLE | 073 | N-C | 2016 | \$168,410.40 | \$126,848.53 | \$27,615.26 |
| PA NORTH | 15022814400 | 1532740 | JACKSON AVENUE AREAS AMRP | 557 | INST-5510'-4", 1210'-2" PL | JACKSON AV | 123 | WAR | 2016 | \$989,209.13 | \$882,958.83 | \$647,304.75 |
| PA NORTH | 15022814600 | 1532764 | MORELAND DR | 559 | LAY 525'-2" PMMP | MORELAND DR | 003 | COR | 2016 | \$33,138.91 | \$55,118.20 | \$5,389.13 |
| PA NORTH | 15022814700 | 1532742 | 2239 - SR66 AT RUSSELL CITY | 557 | INSTALL 6,420' OF 2"PMMP | SR66 | 047 | DE | 2016 | \$215,520.42 | \$272,898.75 | \$2,339.19 |
| PA NORTH | 15022814900 | 1532745 | PLEASANT DRIVE REPLACEMENT | 557 | INST 5,310'-4" PMLP | PLEASANT DR | 123 | WAR | 2016 | \$355,582.10 | \$324,542.98 | \$59,239.09 |
| PA NORTH | 15022815800 | 1532777 | SR 208 @ SWOPE ROAD REPLACEMENT | 557 | 3,450'-4",35'-3", & 650'-2"PMMP | SR208 | 121 | CLI | 2016 | \$302,988.33 | \$222,963.76 | \$58,205.58 |
| PA CENTRAL | 15022816000 | 1532779 | DAUPHIN STREET - MAINLINE REPLACEMENT | 557 | INSTALL 1135'-4"PMLP | DAUPHIN | 003 | PIT | 2016 | \$254,313.80 | \$293,169.68 | \$116,431.81 |
| PA NORTH | 15022816300 | 1532794 | INTERSTATE PARKWAY REPLACEMENT | 557 | INST 380'-4" PMLP | INTERSTATE PY | 083 | BRA | 2016 | \$100,370.19 | \$87,481.12 | \$39,143.74 |
| PA CENTRAL | 15022816501 | 1532800 | GREENWALD REPLACEMENT PROJECT | 557 | INST 5898'-2"& 4" PMMP MAIN | GREENWALD RD | 003 | BET | 2016 | \$533,630.39 | \$622,336.75 | \$25,897.82 |
| PA NORTH | 15022816700 | 1532807 | 14TH ST EXT REPLACEMENT | 557 | INSTALL 515' OF 2" PMMP | 14TH ST | 007 | MON | 2015 | \$71,829.83 | \$73,286.18 | \$26,543.90 |
| PA NORTH | 15022817000 | 1532832 | 230 FIREHALL RD - NEW CASTLE | 559 | LAY 650'-4"PMMP(FIREHALL RD) | FIREHALL | 073 | N-C | 2015 | \$52,067.06 | \$70,991.88 | \$9,517.88 |
| PA NORTH | 15022817700 | 1532923 | EAST MAIN ST SAINT PETERSBURG | 557 | 575'-2" & 1315'-4" PM MP | SR 58 | 031 | ST- | 2016 | \$133,636.26 | \$139,623.36 | \$27,047.55 |
| PA NORTH | 15022819300 | 1533015 | 2231 - HILL - REPL JO | 557 | INSTALL 630'-4" PMP | HILL RD | 003 | WEX | 2016 | \$85,974.20 | \$74,771.23 | \$887.05 |
| PA NORTH | 15022819500 | 1533010 | SR0065 AT CASCADE PARK RR BRIDGE | 561 | 550'-10"CSPH | E WASHINGTON ST | 073 | N-C | 2018 | \$383,575.19 | \$340,304.99 | \$28,708.00 |
| PA NORTH | 15022820000 | 1533038 | WEXFORD RD | 561 | RELOCATE 20'-2" PMMP | SR 0910 | 003 | WEX | 2015 | \$6,705.29 | \$11,078.63 | |
| PA CENTRAL | 15022820300 | 1533049 | 2221 - CASTLE - REPL JO | 557 | INSTALL 28' 6" PL ML | 255 CASTLE DR | 003 | PIT | 2015 | \$12,450.59 | \$10,056.46 | \$2,101.89 |
| PA NORTH | 15022820500 | 1533064 | ALUM BANK BRIDGE RELOCATION | 561 | INSTALL 200'-4" PM MP | SR 3020 | 031 | TUR | 2017 | \$24,868.33 | \$62,471.38 | |
| PA NORTH | 15022820800 | 1533067 | SMITH ROAD REPLACEMENT | 557 | 40'-2" PM IP | SMITH RD | 039 | SLI | 2016 | \$13,084.28 | \$6,074.90 | \$848.32 |
| PA CENTRAL | 15022822100 | 1533841 | PNG EXCHANGE STATION AND PIPING | 559 | INLET TO PNG EXCHANGE STATION | WHITED | 003 | PIT | 2016 | \$20,455.46 | \$13,528.21 | \$0.00 |
| PA NORTH | 15022822501 | 1533105 | SCHOOL ST. REPLACEMENT | 557 | INSTALL 1,840'PMMP & 1440'PMLP | SCHOOL | 003 | AVA | 2017 | \$711,033.43 | \$1,046,204.41 | \$586,956.97 |
| PA NORTH | 15022822901 | 1533128 | MELLON STREET REPLACEMENT | 557 | INSTALL 5200'-2 & 4" PMMP | D-75 MELLON AVE | 007 | BAD | 2016 | \$925,400.21 | \$971,865.40 | \$19,555.99 |
| PA NORTH | 15022823100 | 1533136 | SHERIDAN AVE/JEFFERSON AVE | 557 | INSTALL 1900' 4" PMMP | SHERIDAN | 003 | PIT | 2017 | \$534,902.06 | \$568,608.25 | \$338,163.24 |
| PA NORTH | 15022823300 | 1533139 | 2231 - HYEOLDE - REPL JO | 557 | INSTALL 1400'2" PMMP | HYEOLDE | 003 | COR | 2016 | \$161,579.34 | \$270,529.07 | \$134,070.91 |
| PA NORTH | 15022823501 | 1533140 | BRANDT SCHOOL ROAD | 557 | INSTALL 900'-4"/250'-2"PMMP | BRANDT SCHOOL | 003 | WEX | 2017 | \$272,695.66 | \$364,759.81 | \$334,739.69 |
| PA CENTRAL | 15022823900 | 1533153 | DELCO REPLACEMENT PROJECT | 557 | INSTALL 1787' - 4",6",8" PLP | DELCO | 003 | PIT | 2017 | \$345,391.47 | \$683,773.00 | \$425,827.86 |
| PA CENTRAL | 15022824100 | 1533155 | 2221 - GROVE - REPL JO | 557 | INSTALL 128' 6" PL ML | BRENTVIEW PL | 003 | PIT | 2015 | \$34,150.20 | \$35,337.69 | \$12,443.91 |
| PA CENTRAL | 15022826200 | 1528747 | COCHRAN ROAD REPLACEMENT PROJECT | 557 | INSTALL 2,260'-8"PMLP | COCHRAN RD | 003 | PIT | 2016 | \$708,888.77 | \$974,623.36 | \$715,371.99 |
| PA CENTRAL | 15022826800 | 1533308 | ORCHARD REPLACEMENT PROJECT | 557 | INSTALL 3748 FT | ORCHARD | 003 | PIT | 2016 | \$995,516.32 | \$943,783.77 | \$644,350.39 |
| PA CENTRAL | 15022827100 | 1529719 | FAIRACRES REPLACEMENT PROJECT | 557 | INST 1932' PMP & UPRATE 1700' | FAIRACRES | 003 | PIT | 2016 | \$897,185.90 | \$932,978.03 | \$540,772.34 |

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| PA CENTRAL | 15022827300 | 1533314 | 2221 - MARY - REPL JO | 557 | INSERT 89'-1.25'PLP | MARY | 003 | PIT | 2015 | \$28,649.21 | \$25,901.44 | \$16,225.02 |
| PA NORTH | 15022828101 | 1533346 | SULLIVAN ROAD REPLACEMENT | 557 | INSTALL 1,300'-4", 150'-2" | SULLIVAN RD | 083 | BRA | 2016 | \$134,164.88 | \$106,941.86 | \$4,829.14 |
| PA NORTH | 15022828301 | 1533349 | 2238 - D4002 BROWNTOWN AREA PHASE 1 | 557 | INST -4,560'-8"PL, 1,600'-2"PL | D4002 | 083 | BRA | 2016 | \$834,750.77 | \$908,977.35 | \$415,581.15 |
| PA NORTH | 15022828700 | 1533367 | CHAPLE DR BRIDGE 93613 LINE RELOCATION | 561 | RELO 250' 4" PMP FOR BRIDGE | CHAPLE DR | 007 | ELL | 2016 | \$58,818.69 | \$48,031.86 | \$339.00 |
| PA CENTRAL | 15022828801 | 1533371 | BETTY RAE REPLACEMENT PROJECT | 557 | INSTALL 4,570'-2", 4", 6" PMMP | BETTY RAE | 003 | PIT | 2018 | \$963,855.68 | \$1,929,311.14 | \$540,272.25 |
| PA NORTH | 15022829900 | 1533413 | 1229 S CASCADE ST-REAR | 559 | LAY 200'-2"PM | 1229 S CASCADE ST REAR | 073 | N-C | 2015 | \$20,140.86 | \$13,086.20 | \$1,368.06 |
| PA CENTRAL | 15022830400 | 1533423 | 2221 - CROSBY - REPL JO | 557 | INSTALL 50' 4" PL ML | 2841 CROSBY AV | 003 | PIT | 2015 | \$20,561.58 | \$27,531.19 | \$6,162.66 |
| PA NORTH | 15022831300 | 1533449 | BIG SEWICKLEY CREEK BRIDGE RELO 78417 | 561 | RELO 310' OF 4" PL FOR BRIDGE | BIG SEWICKLEY CREEK RD | 007 | SEW | 2016 | \$89,363.50 | \$67,281.55 | \$413.60 |
| PA NORTH | 15022831500 | 1533428 | VOGAN STREET | 559 | OC550'-4"PMMP- VOGAN ST | VOGAN ST | 073 | N-C | 2015 | \$55,404.69 | \$41,497.06 | \$11,746.33 |
| PA NORTH | 15022832500 | 1533494 | 2231 - CANAL - REPL JO | 557 | PLASTIC INSERT 40'-1.25" PLP | CANAL ST | 007 | BEA | 2015 | \$8,934.28 | \$4,480.26 | \$1,114.00 |
| PA CENTRAL | 15022832800 | 1533503 | CAPE MAY R-2867 VALVE REPLACEMENT | 557 | INSTALL R-2867 FIRE VALVE | CAPE MAY AV | 003 | PIT | 2016 | \$95,471.70 | \$89,173.32 | \$4,527.22 |
| PA CENTRAL | 15022833000 | 1533511 | JONQUIL MAINLINE REPLACEMENT | 557 | INSTALL 705'- 4", 6", 8" PMLP | JONQUIL PL | 003 | PIT | 2016 | \$219,801.65 | \$296,396.33 | \$97,976.86 |
| PA CENTRAL | 15022833501 | 1533543 | REIFERT ST REPLACEMENT PROJECT | 557 | INSTALL 4350' 2", 4" PMP | REIFERT | 003 | PIT | 2016 | \$1,594,412.56 | \$2,247,331.65 | \$1,471,556.11 |
| PA NORTH | 15022833800 | 1533558 | SR 65 LOCATE POINT INSTALL | 559 | INSTALL 4'-4" PM MP | SR 65 | 073 | N-C | 2015 | \$6,345.32 | \$8,661.19 | |
| PA NORTH | 15022834000 | 1533564 | BEAVER ST UPGRADE PROJECT | 559 | LAY 860'-6" PMMP | BEAVER ST | 003 | SEW | 2016 | \$207,116.40 | \$239,870.96 | \$144,344.33 |
| PA CENTRAL | 15022834500 | 1533573 | SIPE ROAD REPLACEMENT PROJECT | 557 | INSTALL 530'-10"CS HP | SIPE | 003 | COR | 2017 | \$241,016.53 | \$482,963.92 | \$190,338.58 |
| PA NORTH | 15022835100 | 1533599 | PALMER AVE & RAILROAD ST REPLACEMENT | 557 | 3020'-2"PM MP | RAILROAD ST | 031 | FOX | 2016 | \$179,900.36 | \$206,602.83 | \$90,758.19 |
| PA NORTH | 15022835400 | 1319257 | 2231 11TH AVE FROM 7TH ST TO ALLEGHENY | 557 | INSTALL 40' OF 6" PLP | 11TH | 007 | N-B | 2015 | \$19,615.09 | \$70,416.83 | \$26,541.75 |
| PA CENTRAL | 15022836000 | 1534440 | ARLINGTON & BROWNSVILLE REPLACEMENT | 557 | INST 2800 - 8"PMMP | BROWNSVILLE | 003 | PIT | 2016 | \$999,172.35 | \$963,385.46 | \$41,688.51 |
| PA NORTH | 15022837200 | 1533751 | S. JACKSON AVE REPLACEMENT | 557 | INSTALL 1255' OF 2" & 4" PMMP | S JACKSON AV | 003 | PIT | 2016 | \$202,204.12 | \$324,152.31 | \$273,367.63 |
| PA NORTH | 15022838001 | 1533774 | CHAPLE RD REPLACEMENT | 557 | INSTALL 1520'-2 & 4" PMMP | CHAPLE RD | 007 | MON | 2017 | \$222,389.76 | \$238,497.50 | \$139,596.09 |
| PA NORTH | 15022838500 | 1533782 | N. BALPH AVENUE AMRP | 557 | LAY 5440'-4" & 960'-2" PMMP | N. BALPH AV PHASE-1 | 003 | PIT | 2017 | \$1,087,965.79 | \$1,333,335.79 | \$706,687.06 |
| PA CENTRAL | 15022839100 | 1533810 | 2221 - REDWOOD - REPL JO | 557 | INSTALL 110' 4" PMMP | REDWOOD ST | 003 | PIT | 2016 | \$26,278.96 | \$26,993.01 | \$18,015.37 |
| PA NORTH | 15022839300 | 1533818 | CONWAY WALLROSE REPLACEMENT | 557 | INSTALL 2660'-4"PMMP (DPI) | CONWAY WALLROSE RD | 007 | BAD | 2015 | \$466,638.97 | \$438,494.17 | \$114,210.45 |
| PA NORTH | 15022839700 | 1533829 | W MADISON LEAK REPLACEMENT | 557 | INSTALL 50'-4" PMLP | W MADISON ST | 007 | ROC | 2016 | \$15,855.57 | \$30,147.13 | \$6,339.44 |
| PA NORTH | 15022840000 | 1533836 | 2231 - KENDALL - REPL JO | 557 | INSTALL 480'-4"PMMP | KENDALL ST | 003 | COR | 2015 | \$71,884.87 | \$103,460.87 | \$60,397.06 |
| PA CENTRAL | 15022840200 | 1533851 | 2221 - MCLAIN - REPL JO | 557 | INSTALL 8' 2" PL & 30' 3" PL | 903 MCLAIN ST | 003 | PIT | 2015 | \$45,198.60 | \$44,197.21 | \$23,296.49 |
| PA NORTH | 15022841400 | 1533965 | MAPLE ALLEY REPLACEMENT | 557 | 350'-4" PM LP, 250'-2"PM LP | MAPLE AL | 031 | NW- | 2016 | \$51,892.17 | \$37,223.46 | \$8,250.00 |
| PA CENTRAL | 15022841600 | 1533966 | 2221 - SOUTHCREST - REPL JO | 557 | INSTALL 260' 4" PL ML | SOUTHCREST | 003 | PIT | 2015 | \$107,572.84 | \$116,704.51 | \$69,395.09 |
| PA CENTRAL | 15022842102 | 1534009 | FURNACE STREET REPLACEMENT PROJECT | 557 | INSTALL 700'-8"PHHP MAIN | FURNACE | 003 | MCK | 2018 | \$136,136.52 | \$317,860.32 | \$0.00 |
| PA CENTRAL | 15022842300 | 1534016 | ISLAND AVE REPLACEMENT PROJECT | 557 | 1394'8P,654'6P,406'4P,30'2P | ISLAND AVE | 003 | MCK | 2016 | \$1,077,848.62 | \$1,132,406.68 | \$905,433.13 |
| PA CENTRAL | 15022842500 | 1534018 | 2221 - CATALPA - REPL JO | 557 | INSTALL 81' 6" PLASTIC ML | 235 CATALPA PL | 003 | PIT | 2015 | \$18,398.69 | \$6,615.32 | \$5,984.30 |
| PA CENTRAL | 15022842700 | 1534019 | 2221 - MAYTIDE - REPL JO | 557 | INSTALL 56'-4" PL ML | 801 MAYTIDE AV | 003 | PIT | 2015 | \$8,227.21 | \$7,523.24 | \$0.00 |
| PA CENTRAL | 15022842900 | 1534033 | REBECCA REPLACEMENT PROJECT | 557 | INSTALL 744' 4" PLASTIC ML | REBECCA | 003 | PIT | 2015 | \$127,606.36 | \$143,277.56 | \$104,816.44 |
| PA NORTH | 15022843200 | 1534050 | BRISTOL WAY INSERT | 557 | INSERT 130'-1 1/4" PMLP | BRISTOL | 007 | ROC | 2016 | \$6,277.09 | \$464.50 | \$0.00 |
| PA CENTRAL | 15022843600 | 1534146 | TRANSVERSE REPLACEMENT PROJECT | 557 | LAY 15'-4"PLP | TRANSVERSE | 003 | PIT | 2015 | \$6,653.39 | \$2,906.35 | \$1,501.71 |
| PA CENTRAL | 15022843900 | 1529848 | RALSTON PLACE MP PROJECT | 557 | INSTALL 30'-PMLP | BEVERLY | 003 | PIT | 2015 | \$14,874.39 | \$10,343.87 | \$0.00 |
| PA CENTRAL | 15022844400 | 1534165 | FIDELITY REPLACEMENT PROJECT | 557 | INSTALL 8370' 4', 6", 8" PMLP | FIDELITY | 003 | PIT | 2016 | \$1,330,859.66 | \$1,020,595.50 | \$385,600.63 |
| PA CENTRAL | 15022845300 | 1534232 | 2221 - KEYSTONE - REPL JO | 557 | INSTALL 5' 6" PL ML | KEYSTONE | 003 | BET | 2015 | \$3,602.97 | \$90.84 | \$86.80 |
| PA CENTRAL | 15022845800 | 1534251 | 2221 - METHYL - REPL JO | 557 | INSTALL 5' 4" PLASTIC ML | 1633 METHYL AV | 003 | PIT | 2015 | \$17,204.19 | \$12,546.84 | \$4,206.48 |
| PA NORTH | 15022847000 | 1533959 | TOMS RUN ROAD BETTERMENT PROJECT | 559 | LAY 4000'-8" PHHP | TOMS RUN RD | 003 | SEW | 2017 | \$695,699.42 | \$838,897.05 | \$479,081.20 |
| PA NORTH | 15022847100 | 1533959 | TOMS RUN ROAD BETTERMENT PROJECT | 559 | INSTALL 6000'-6" 2120'-4" PMMP | DUFF RD | 003 | SEW | 2017 | \$1,266,161.16 | \$1,334,385.13 | \$951,941.51 |
| PA NORTH | 15022847600 | 1534307 | 12TH AVENUE REPLACEMENT | 557 | INSTALL 1770'-4" PMLP | 12TH AV | 007 | BVR | 2016 | \$319,277.31 | \$308,492.07 | \$228,702.13 |
| PA NORTH | 15022848101 | 1534315 | THORN HILL RD/KNOB RD BETTERMENT | 559 | INSTALL 11,520'-8'6"/4"PMMP | KNOB RD | 003 | WEX | 2017 | \$2,198,597.41 | \$1,937,108.47 | \$544,303.63 |
| PA NORTH | 15022848300 | 1534315 | THORN HILL RD/KNOB RD BETTERMENT | 559 | INSTALL 920'-8" HDPE | BRUSH CREEK RD | 003 | WAR | 2017 | \$113,635.36 | \$210,791.35 | \$1,162.50 |
| PA NORTH | 15022848600 | 1534312 | ABD R-1415/INSTALL R-4791 | 561 | OC/DB 300'-2"PMMP | 210 W WASHINGTON ST | 073 | N-C | 2019 | \$83,527.39 | \$100,211.57 | \$19,538.81 |
| PA CENTRAL | 15022849300 | 1534362 | ALLENDER REPLACEMENT PROJECT | 557 | INSTALL 2091', REPLACE 2041 | ALLENDER | 003 | PIT | 2016 | \$656,706.91 | \$746,513.89 | \$656,560.09 |
| PA CENTRAL | 15022849500 | 1425053 | WENZELL BRIDGE RELOCATION | 561 | INST 1100'-12"CS HP | WENZELL AV | 003 | PIT | 2016 | \$1,493,166.66 | \$1,920,011.69 | \$3,618.00 |
| PA CENTRAL | 15022849700 | 1425053 | WENZELL BRIDGE RELOCATION | 561 | INST 1200'-6"PLP | WENZELL AV | 003 | PIT | 2016 | \$398,937.00 | \$453,497.89 | \$433,582.01 |
| PA NORTH | 15022850100 | 1104326 | D-1601 PHASE III | 559 | PM - D-1601 PHASE 3 REG OUTLET | | 073 | N-C | 2015 | \$0.00 | \$70.39 | |
| PA NORTH | 15022850700 | 1534371 | 422 RELOCATION | 561 | INSTALL 1480' OF 6" PMMP | NEW BUTLER RD | 073 | N-C | 2016 | \$123,388.01 | \$105,716.14 | |
| PA NORTH | 15022850900 | 1534402 | WAYNE AVE REPLACEMENT | 557 | OC -2265'-2" & 4" PMMP | WAYNE | 073 | ELL | 2016 | \$488,800.53 | \$612,032.13 | \$491,885.85 |
| PA NORTH | 15022851200 | 1534407 | 2239 - 4TH - REPL JO | 557 | INSTALL -10'-4"PL | 618 4TH AV | 123 | WAR | 2016 | \$8,527.57 | \$16,138.06 | \$2,828.00 |
| PA CENTRAL | 15022851501 | 1534440 | ARLINGTON & BROWNSVILLE REPLACEMENT | 557 | INSTALL 1300'-8"PMMP,350'-2"&6"PMMP | ARLINGTON AV | 003 | PIT | 2016 | \$828,796.51 | \$985,574.84 | \$253,479.16 |
| PA NORTH | 15022851800 | 1534449 | 2231 - ACACIA - REPL JO | 557 | LAY 15'-4" PMLP | ACACIA LN | 003 | PIT | 2015 | \$11,159.17 | \$5,738.16 | \$2,864.50 |
| PA NORTH | 15022852600 | 1534519 | TODD LANE BETTERMENT | 559 | LAY 150'-2"PMMP TODD HOLLOW | 264 TODD LN | 007 | MON | 2016 | \$6,401.80 | \$3,723.59 | \$849.00 |
| PA NORTH | 15022853100 | 1534529 | ETNA STREET REPLACEMENT | 557 | DB -1385'-4" & OC -1540' PMLP | ETNA | 073 | N-C | 2017 | \$340,294.89 | \$457,783.59 | \$203,173.81 |
| PA NORTH | 15022853500 | 1530886 | CHURCH STREET - ECONOMY AMRP | 559 | INSTALL 510'-4" PMLP CROSSINGS | MAPLEWOOD AV | 007 | AMB | 2017 | \$91,323.21 | \$173,359.79 | \$125,442.10 |

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| PA CENTRAL | 15022854700 | 1534626 | 2221 - MARKHAM - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MARKHAM DR | 003 | PIT | 2015 | \$2,359.97 | \$4,961.12 | \$1,026.62 |
| PA CENTRAL | 15022854900 | 1534628 | 2221 - CLEVER - REPL JO | 557 | INSTALL 231'-4" PMLP MAIN | CLEVER | 003 | MCK | 2016 | \$46,440.00 | \$48,686.53 | \$12,204.32 |
| PA CENTRAL | 15022855500 | 1534647 | MITCHELL REPLACEMENT PROJECT | 557 | LAY 5'-4" PLP | MITCHELL AV | 003 | CLA | 2015 | \$11,074.59 | \$6,948.30 | \$0.00 |
| PA NORTH | 15022856001 | 1534663 | HILL STREET | 557 | INSTALL 1000'-6" PLP/600'-4" PLP | HILL ST | 003 | SEW | 2016 | \$455,724.63 | \$372,967.00 | \$273,505.55 |
| PA CENTRAL | 15022857000 | 1534719 | MICROBERTS 20" BSHP REPLACEMENT | 557 | REPLACE PIPE-ELIMINATE VALVES | MICROBERTS | 003 | PIT | 2016 | \$281,848.74 | \$289,162.51 | \$69,946.85 |
| PA NORTH | 15022857300 | 1634895 | MARONDA FOUNDATION | 559 | INSTALL 60'-2" PMP MARONDA FND | 601 FLAUGHERTY RUN RD | 003 | COR | 2016 | \$11,634.37 | \$55,681.12 | \$15,396.60 |
| PA NORTH | 15022857400 | 1534770 | BEST AVENUE REPLACEMENT PROJECT | 557 | INST. 1160'-4" & 120'-2" PM MP | BEST AV | 031 | KNO | 2017 | \$218,729.79 | \$115,275.34 | \$16,393.47 |
| PA NORTH | 15022857700 | 1534792 | KERR STREET REPLACEMENT | 557 | DB -900' - 2" PMMP | KERR ST | 073 | N-C | 2016 | \$77,120.05 | \$86,536.01 | \$14,115.86 |
| PA SOUTH | 15023371600 | 1423509 | D-8535 YOUGH RIVER | 557 | PM - 4" MP BIKE TRAIL BORE INST | BIKE TRAIL | 051 | CON | 2015 | \$401,320.86 | \$407,153.32 | \$89,255.10 |
| PA SOUTH | 15023371800 | 1527701 | | 559 | INSTALL 170' - 1.25" PMLP | CYPRESS ST | 129 | IRW | 2015 | \$3,291.70 | \$2,712.65 | \$371.20 |
| PA SOUTH | 15023372001 | 1527722 | 2321 - MULBERRY - REPL JO | 557 | INSTALL 715'-4" PMP, 555'-2" PMP | MULBERRY ST | 129 | SCO | 2015 | \$196,030.72 | \$184,561.40 | \$23,874.92 |
| PA CENTRAL | 15023372800 | 1527877 | DEVILBLISS REGULATOR REPLACEMENT | 559 | LAY 25'-2" PIP | SPRING VALLEY RD | 125 | SCE | 2018 | \$24,622.82 | \$172.70 | |
| PA CENTRAL | 15023374200 | 1528003 | HUFFORD RUN REPLACEMENT PROJECT | 557 | LAY 2800'-6" PMP | HUFFORD RUN RD | 125 | MAR | 2016 | \$557,548.76 | \$459,238.21 | |
| PA CENTRAL | 15023375000 | 1528050 | 2391 - TRENTON - REPL JO | 557 | LAY 54'-2" PMP (VERBAL) | 101 TRENTON CR | 125 | MCM | 2015 | \$3,506.02 | \$3,483.50 | \$511.50 |
| PA CENTRAL | 15023375200 | 1528059 | RAILROAD ST REPLACEMENT PROJECT | 557 | 261'-2" PLP/474'-6" PLP/25'-8" P | RAILROAD | 125 | MID | 2015 | \$125,144.37 | \$142,046.16 | \$59,265.21 |
| PA CENTRAL | 15023375401 | 1528095 | 824 OLD WASHINGTON RD RELOCATION | 561 | INSTALL 120'-2" PMLP | 824 OLD WASHINGTON RD | 125 | MCM | 2015 | \$6,421.23 | \$1,034.78 | |
| PA SOUTH | 15023375600 | 1528117 | NEW STANTON - RT. 70 RELOCATION | 561 | INSTALL 4,416' - 2" & 4" PMMP | NEW STANTON NORTH | 129 | NEW | 2015 | \$527,649.58 | \$621,877.04 | \$99,021.71 |
| PA CENTRAL | 15023376000 | 1528131 | COTTON WOOD DRIVE REPLACEMENT PROJECT | 557 | INSTALL 275'-2" PMMP | COTTONWOOD DR | 003 | OAK | 2015 | \$19,121.69 | \$45,979.78 | \$7,777.93 |
| PA SOUTH | 15023376201 | 1528132 | RT. 31 RELOCATION | 561 | INSTALL 4722' - 2" & 4" PMMP | RT. 31 | 111 | SOM | 2016 | \$397,257.55 | \$420,010.74 | \$41,430.08 |
| PA SOUTH | 15023379200 | 1528571 | BROWNSVILLE SCHOOL DISTRICT RELOCATION | 561 | RELOCATION-INSTALL 590'-8" PMP | D- 7090 | 051 | HIL | 2015 | \$89,000.02 | \$84,975.93 | \$10,437.76 |
| PA CENTRAL | 15023379800 | 1528638 | MONINGER AVENUE REPLACEMENT PROJECT | 557 | LAY 3605'-2" PMP | MONINGER AV | 125 | HOU | 2015 | \$600,176.33 | \$376,696.72 | \$112,085.48 |
| PA SOUTH | 15023380000 | 1528672 | 2321 - 8TH - REPL JO (SHEETZ) | 557 | INSTALL 535'-4" & 120'-2" PLP | N 8TH ST | 051 | CON | 2015 | \$72,497.03 | \$76,811.45 | \$19,934.93 |
| PA CENTRAL | 15023380300 | 1528702 | 2391 - ARNOLD - REPL JO | 557 | LAY 330'-2" P | ARNOLD AV | 125 | STR | 2015 | \$39,148.54 | \$56,861.45 | \$19,215.23 |
| PA SOUTH | 15023380600 | 1528722 | 2321 - NINTH - REPL JO | 557 | 40'-2" P | 107 NINTH ST | 125 | DON | 2015 | \$4,831.94 | \$1,147.06 | \$0.00 |
| PA SOUTH | 15023384600 | 1528775 | 2321 - CLAY - REPL JO | 557 | INSTALL 350' - 4" PMMP | CLAY AV | 129 | JEAN | 2015 | \$22,034.30 | \$16,567.77 | \$0.00 |
| PA CENTRAL | 15023385300 | 1425543 | PM-TANNEHILL POD REPLACEMENT (D-1581) | 557 | PM - D-1581 TANNEHILL PIPE | SR 980 | 125 | CAN | 2016 | \$299,998.00 | \$531,322.46 | |
| PA SOUTH | 15023385800 | 1528843 | 2321 - REBECCA - REPL JO | 557 | INSTALL 1740' P-MP | REBECCA ST | 051 | BRO | 2015 | \$217,139.53 | \$200,869.75 | \$59,883.64 |
| PA CENTRAL | 15023386000 | 1528856 | VALLEY CHURCH ROAD RELOCATION PROJECT | 561 | DB 150'-2" PMP, LAY 30'-2" PMP | VALLEY CHURCH RD | 059 | GRA | 2016 | \$62,074.73 | \$21,534.23 | \$0.00 |
| PA CENTRAL | 15023386200 | 1528945 | 2391 - MARYLAND - REPL JO | 557 | LAY 7'-4" P (VERBAL) | MARYLAND AV | 125 | HOU | 2015 | \$9,088.04 | \$4,137.47 | \$0.00 |
| PA CENTRAL | 15023386600 | 1528973 | S. CENTRAL REPLACEMENT PROJECT | 557 | LAY 5260'-2", 4", 6" PMMP | CENTRAL | 125 | CAN | 2016 | \$827,692.26 | \$856,191.03 | \$135,309.64 |
| PA CENTRAL | 15023387900 | 1529024 | 2391 - MCKNIGHT - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MCKNIGHT | 125 | WAS | 2015 | \$9,167.78 | \$9,440.16 | \$2,696.58 |
| PA SOUTH | 15023388700 | 1529045 | 2321 - D-7090 - REPL JO | 557 | INST. 1200'-8" PMMP ENERGY DR. | D-7090 | 051 | MAS | 2016 | \$301,595.41 | \$281,623.23 | |
| PA SOUTH | 15023389700 | 1529120 | 2321 - MAIN - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 817 E MAIN ST | 129 | WES | 2015 | \$6,611.42 | \$1,315.44 | |
| PA CENTRAL | 15023391400 | 1421856 | BATTLERIDGE REPLACEMENT PROJECT | 559 | LAY 25'-10" WTHP | BATTLERIDGE RD | 003 | MCD | 2016 | \$165,634.05 | \$312,819.72 | |
| PA CENTRAL | 15023394201 | 1529275 | HIGHLAND RIDGE ROAD REPLACEMENT | 557 | LAY 1175'-2", 4" PMMP | HIGHLAND RIDGE RD | 125 | CLA | 2016 | \$149,629.95 | \$134,282.85 | \$23,173.38 |
| PA SOUTH | 15023394400 | 1529280 | 2321 - OLD ROUTE 21 - REPL JO | 557 | INSTALL 2" PV, 5'-2" P-MP | 356 OLD ROUTE 21 RD | 051 | MCC | 2015 | \$9,271.38 | \$7,980.67 | \$409.60 |
| PA SOUTH | 15023394900 | 1529389 | 2321 - 5TH - REPL JO | 557 | INSTALL 980'-2" & 4" P | 1010 5TH ST | 051 | HIL | 2015 | \$75,283.85 | \$97,023.47 | \$10,623.33 |
| PA CENTRAL | 15023395300 | 1529414 | BROOKSIDE DRIVE BETTERMENT PROJECT | 559 | LAY 630'-2" PIP | BROOKSIDE DR | 125 | MCD | 2016 | \$60,837.60 | \$79,293.55 | \$5,076.95 |
| PA CENTRAL | 15023397800 | 1529619 | CENTRAL AVENUE REPLACEMENT PROJECT | 557 | LAY 150'-4" P | CENTRAL AV | 125 | CAN | 2015 | \$42,375.74 | \$97,908.59 | \$44,911.89 |
| PA CENTRAL | 15023399100 | 1529759 | MCELREE RD REPLACEMENT PROJECT | 557 | REPLACE MAIN - LEAKAGE | MCELREE | 125 | WAS | 2016 | \$705,816.82 | \$481,794.31 | \$49,076.46 |
| PA CENTRAL | 15023399500 | 1529800 | 2391 - WHEELING - REPL JO | 557 | VERBAL - LAY 111'-2" PLP | WHEELING | 125 | WAS | 2015 | \$13,621.65 | \$17,812.04 | \$7,611.50 |
| PA SOUTH | 15023400200 | 1529838 | CENTER HWY - ROAD SLIP | 559 | INSTALL 620'-4" PLP | CENTER | 129 | N H | 2015 | \$37,201.34 | \$44,028.82 | \$6,310.76 |
| PA SOUTH | 15023402900 | 1530033 | 2321 - S MT VERNON AVE - REPL JO | 557 | INSTALL 780'-4" PM-LP | BIERER LN | 051 | UNI | 2015 | \$127,369.92 | \$237,960.35 | \$10,054.20 |
| PA SOUTH | 15023403100 | 1530033 | 2321 - S MT VERNON AVE - REPL JO | 557 | INST 560'-4" PM-MP, 165'-2" PM-MP | VEECH ST | 051 | UNI | 2015 | \$101,567.00 | \$189,696.64 | \$21,232.11 |
| PA SOUTH | 15023403300 | 1530033 | 2321 - S MT VERNON AVE - REPL JO | 557 | INST 906'-8P, 2310'-6P, 309'-4P | S MT VERNON AV | 051 | UNI | 2015 | \$1,472,315.03 | \$1,923,828.51 | \$1,375,331.35 |
| PA CENTRAL | 15023403500 | 1530066 | 2391 - IMPERIAL - REPL JO | 557 | LAY 5'-1.25" PMP--VERBAL | 81 IMPERIAL AV | 125 | WAS | 2015 | \$1,019.88 | \$2,746.66 | |
| PA SOUTH | 15023403800 | 1530067 | 2321 - RT 40 - REPL JO | 557 | INST. 185'-2" PMMP RT. 40 | RT 40 | 051 | HOP | 2015 | \$19,747.99 | \$33,858.56 | \$7,051.20 |
| PA SOUTH | 15023404000 | 1530088 | G ALY | 559 | INST. 400'-2" PMLP G ALY | G | 129 | TAR | 2015 | \$19,575.92 | \$19,796.89 | \$2,897.20 |
| PA CENTRAL | 15023405000 | 1530319 | SR 519 MAIN RELOCATION | 561 | DB 560'-4" PMP | SR 519 | 125 | WAS | 2015 | \$65,579.13 | \$71,728.47 | |
| PA CENTRAL | 15023405200 | 1530259 | 2391 - OLD OAK - REPL JO | 557 | LAY 50'-2" PLP | OLD OAK | 125 | MCM | 2015 | \$17,148.21 | \$16,533.50 | \$8,062.73 |
| PA CENTRAL | 15023405401 | 1530309 | LINDEN RD BETTERMENT PROJECT | 559 | DB 305'-4" PMP | LINDEN | 125 | WAS | 2018 | \$164,100.19 | \$208,340.02 | \$0.00 |
| PA SOUTH | 15023405800 | 1531715 | SR 21, SEC 10D | 561 | INSTALL - DD 700'-4" PM-MP | ROY E FURMAN HW | 059 | CAR | 2015 | \$80,170.91 | \$50,551.66 | \$2,043.12 |
| PA SOUTH | 15023406000 | 1530312 | 2321 - FAYETTE - REPL JO | 557 | INSTALL 865'-8" PMLP | W FAYETTE ST | 051 | CON | 2016 | \$177,053.81 | \$231,146.73 | \$58,085.14 |
| PA SOUTH | 15023406201 | 1530333 | 2321 - F - REPL JO | 557 | INST 1513'-4" PMMP | F | 129 | YOU | 2016 | \$179,663.37 | \$232,441.80 | \$31,309.49 |
| PA SOUTH | 15023406400 | 1530345 | 7TH & ORCHARD ST | 559 | INST 115'-8" PM-LP | 7TH & ORCHARD ST | 125 | CAL | 2015 | \$78,913.91 | \$107,220.14 | \$9,855.38 |
| PA CENTRAL | 15023407500 | 1212450 | HIGHCROFT RESERVE | 559 | 200'-6" PMP INLET FOR R-4782 | FOUR COINS RD | 125 | CAN | 2015 | \$77,189.59 | \$56,737.65 | \$4,550.39 |
| PA CENTRAL | 15023407900 | 1530317 | MUSE ELEMENTARY SCHOOL | 559 | INSTALL 650'-6" PMIP | MUSE-BISHOP RD | 125 | MUS | 2016 | \$92,781.28 | \$99,637.53 | \$0.00 |
| PA CENTRAL | 15023408100 | 1530317 | MUSE ELEMENTARY SCHOOL | 559 | INSTALL 160'-4" PMIP | SCHOOL ST | 125 | MUS | 2016 | \$27,031.04 | \$32,329.67 | \$418.08 |

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| PA CENTRAL | 15023408300 | 1530538 | 2391 - GRACE - REPL JO | 557 | LAY 4'-4"PLP, 8'-2"PLP | GRACE | 125 | CAN | 2015 | \$19,534.66 | \$14,113.18 | \$2,823.02 |
| PA CENTRAL | 15023409300 | 1530614 | SR 4018 BRIDGE RELOCATION | 561 | INSTALL 605' - 4' PLP | SR 4018 | 125 | AVE | 2016 | \$167,687.13 | \$221,310.38 | \$39,988.97 |
| PA CENTRAL | 15023410000 | 1530726 | MOORE AVENUE BETTERMENT PROJECT | 559 | LAY 60'-2"PLP | 114 MOORE AV | 125 | MCM | 2015 | \$6,683.95 | \$7,517.45 | \$1,893.48 |
| PA SOUTH | 15023410300 | 1530839 | 2321 - EDWARDS - REPL JO | 557 | INST. 370'-2" PMLP EDWARDS ST. | 217 EDWARDS DR | 051 | DIC | 2015 | \$11,919.84 | \$19,134.47 | \$0.00 |
| PA SOUTH | 15023410600 | 1319351 | 2321 - ASH - REPL JO | 559 | INSTALL 11' - 3' PLP | BROAD ST | 129 | JEA | 2015 | \$8,033.50 | \$5,425.91 | \$429.00 |
| PA SOUTH | 15023411801 | 1531026 | 2321 - BULLITT - REPL JO | 557 | INSTALL 1,953'-2" & 4" PMMP | BULLITT | 129 | JEA | 2016 | \$646,327.55 | \$704,763.78 | \$7,740.50 |
| PA SOUTH | 15023412001 | 1531029 | 2321 - ALTMAN - REPL JO | 557 | INSTALL 328'-4" PMLP | ALTMAN | 129 | JEA | 2017 | \$121,846.50 | \$125,760.49 | \$8,102.64 |
| PA SOUTH | 15023412901 | 1531061 | 2321 - RIDGE - REPL JO | 557 | INSTALL 1100'-2" PM-MP | RIDGE RD | 125 | BO | 2016 | \$88,486.69 | \$125,910.57 | \$296.40 |
| PA SOUTH | 15023413300 | 1530620 | FIVE GUYS RESTAURANT | 559 | INSTALL 12'-2"PMP | 79 RESTAURANT RW | 051 | UNI | 2015 | \$2,342.50 | \$2,089.04 | |
| PA SOUTH | 15023414000 | 1531209 | 2321 - WOODLAWN - REPL JO | 557 | INST. 50'-2" PMMP WOODLAWN | WOODLAWN AV | 051 | CON | 2015 | \$42,644.54 | \$50,271.24 | \$772.92 |
| PA SOUTH | 15023414301 | 1320150 | SR 21, SEC J10 ROAD PROJECT | 561 | INSTALL 3,635'-4", 600'-6" PLAS | MCCLELLANDTOWN RD | 051 | UNI | 2015 | \$517,233.13 | \$517,517.31 | \$17,296.50 |
| PA SOUTH | 15023414601 | 1530872 | TELEGRAPH RD | 559 | INSTALL 60'-2" PM-IP | TELEGRAPH RD | 051 | HIL | 2015 | \$16,550.32 | \$23,754.15 | \$0.00 |
| PA CENTRAL | 15023415800 | 1531398 | D-36(QUEEN OF HEAVEN) REPLACEMENT PROJ | 557 | DB 3660'-8"PMP, 15'-4"PMP | D-36 (QUEEN OF HEAVEN) | 125 | MCM | 2017 | \$682,732.91 | \$875,296.48 | \$13,200.50 |
| PA CENTRAL | 15023416100 | 1212450 | HIGHCROFT RESERVE | 559 | INST 166'-6" FOR R4782 OUTLET | FOUR COINS DR | 125 | CAN | 2015 | \$76,045.83 | \$28,394.53 | \$0.00 |
| PA SOUTH | 15023416400 | 1531411 | 2321 - LAUGHLIN - REPL JO | 557 | INST. 370'-4" PMLP LAUGHLIN | LAUGHLIN | 051 | DAW | 2016 | \$71,043.53 | \$64,350.42 | \$30,204.90 |
| PA SOUTH | 15023418200 | 1531605 | 2321 - STANTON - REPL JO | 557 | INSTALL 20'-2" PMMP | STANTON AV | 129 | NEW | 2015 | \$3,627.30 | \$1,744.28 | \$0.00 |
| PA SOUTH | 15023418700 | 1531631 | YOUNGWOOD NORTH | 557 | INSTALL 3,778'- 4' & 2' PMMP | YOUNGWOOD NORTH | 129 | YOU | 2015 | \$370,693.73 | \$268,605.16 | \$56,631.16 |
| PA CENTRAL | 15023419200 | 1102389 | HILLSCHOOL HOUSE REGULATOR REPLACEMENT | 559 | LAY 35'-2"HP | HILL SCHOOL HOUSE RD | 059 | WAY | 2015 | \$13,355.22 | \$210.71 | |
| PA CENTRAL | 15023419400 | 1531668 | 2391 - GRACE - REPL JO | 557 | LAY 8'-2"P, 8'-4"PLP -- VERBAL | GRACE AV | 125 | CAN | 2015 | \$14,359.13 | \$11,830.57 | \$2,337.47 |
| PA CENTRAL | 15023419600 | 1531675 | OAK GROVE RD(D504) REPLACEMENT PROJECT | 557 | INSTALL 20,925'-8/6/4/2" PMMP | OAK GROVE RD | 125 | WAS | 2016 | \$3,515,514.90 | \$3,738,031.57 | \$994,167.66 |
| PA SOUTH | 15023419802 | 1531679 | ROUTE 30 - 2321 | 557 | INSTALL 1,380' - 2' & 4" PMIP | ROUTE 30 | 129 | IRW | 2016 | \$213,746.12 | \$236,633.55 | \$32,083.78 |
| PA SOUTH | 15023420000 | 1531682 | 2321 - WESTERN - REPL JO | 557 | INSTALL 415' - 6" PHHP & CSHP | WESTERN AL | 129 | IRW | 2016 | \$108,794.79 | \$134,027.78 | \$32,885.16 |
| PA CENTRAL | 15023420400 | 1533368 | MILLERS RUN ROAD RELOCATION PROJECT | 561 | DB 390'-2"PMP | MILLERS RUN RD | 003 | CUD | 2016 | \$70,240.48 | \$46,396.50 | \$603.00 |
| PA SOUTH | 15023421501 | 1531782 | 2321 - 9TH - REPL JO | 557 | INSTALL 81'-2" PM-LP | 9TH ST | 125 | DON | 2015 | \$15,308.63 | \$14,165.01 | \$0.00 |
| PA SOUTH | 15023422800 | 1531813 | 2321 - GRANDVIEW PROJECT - REPL JO | 557 | INSTALL 5564'-2", 4", 6" PM-MP | GRANDVIEW WY | 125 | CHA | 2016 | \$958,808.99 | \$968,702.13 | \$702,828.13 |
| PA CENTRAL | 15023423501 | 1531168 | ROBINSON RUN POD - CPG LINE 1570 | 561 | INSTALL 2600'-4" PMMP | ROBINSON RUN RD | 003 | MCD | 2016 | \$215,634.39 | \$311,022.35 | \$117,867.76 |
| PA CENTRAL | 15023424100 | 1531904 | STEUBENVILLE PIKE | 557 | LAY 235'-2", 4" PMMP | 759 STEUBENVILLE PIKE | 125 | BUR | 2017 | \$22,145.25 | \$69,121.44 | \$8,069.00 |
| PA CENTRAL | 15023424600 | 1531927 | PIKE STREET BETTERMENT PROJECT | 559 | DB 70'-2" PMMP | PIKE ST | 125 | MEA | 2016 | \$29,004.20 | \$28,509.53 | |
| PA CENTRAL | 15023426100 | 1532011 | 2391 - MORGAN HILL - REPL JO | 557 | LAY 84'-4"PMP --VERBAL JO | MORGAN HILL | 003 | MOR | 2015 | \$41,903.93 | \$38,485.94 | \$8,777.32 |
| PA SOUTH | 15023427301 | 1532079 | | 559 | INST. 88'-2" PMMP | SHORT ST | 129 | RIL | 2016 | \$15,731.22 | \$14,744.86 | \$0.00 |
| PA CENTRAL | 15023428300 | 1532207 | PIKE ST REPLACEMENT PROJECT | 557 | LAY 485'-6"PLP, 50'-2"PLP | W PIKE ST | 125 | CAN | 2015 | \$186,882.83 | \$299,646.83 | \$270,283.82 |
| PA CENTRAL | 15023429400 | 1532207 | PIKE ST REPLACEMENT PROJECT | 559 | DB 320'-2"PMP | CRANBERRY AL | 125 | CAN | 2015 | \$47,851.76 | \$53,650.97 | \$26,104.43 |
| PA SOUTH | 15023429700 | 1532300 | 2321 - REG STATION 2709 - REPL JO | 557 | INSTALL 20' - 3' PMMP | REG STATION 2709 | 129 | NEW | 2015 | \$24,730.35 | \$17,868.45 | |
| PA CENTRAL | 15023431200 | 1532501 | THOMAS RD RELOCATION | 561 | LAY 120'-2"PMP | THOMAS RD | 125 | VEN | 2015 | \$18,736.67 | \$11,092.41 | \$0.00 |
| PA SOUTH | 15023431701 | 1532507 | 2321 - SMITHTON TOWN REPLACEMENT | 557 | INSTALL 5815'2", 4", 6" PM-MP | 2ND | 129 | SMI | 2016 | \$1,017,215.81 | \$1,045,716.18 | \$409,520.45 |
| PA SOUTH | 15023431900 | 1532507 | 2321 - SMITHTON TOWN REPLACEMENT | 557 | INSTALL 4108'-2" PM-MP | FORT | 129 | SMI | 2016 | \$525,054.65 | \$579,683.51 | \$441,427.32 |
| PA CENTRAL | 15023432300 | 1532519 | MCCLANE STREET BETTERMENT PROJECT | 559 | DB 220'-2"PMP | MCCLANE RD | 003 | CUD | 2016 | \$53,398.70 | \$44,060.23 | |
| PA SOUTH | 15023433600 | 1532577 | JAMES R HOTSINPILLER | 559 | INSTALL 410' - 2' PMMP | 192 BLOSSER HILL RD EXT | 051 | PT | 2015 | \$16,977.97 | \$12,848.54 | \$770.64 |
| PA SOUTH | 15023433700 | 1532581 | 2321 - T-389 - REPL JO | 557 | INST 4650'-8", 1105'-4"PMMP | D- 7055 | 061 | SMI | 2016 | \$549,132.81 | \$634,162.33 | \$29,340.96 |
| PA SOUTH | 15023434800 | 1532802 | 2321 - GASKILL - REPL JO | 557 | INST. 1325'-6" PLP | GASKILL AV | 129 | JEA | 2015 | \$278,820.66 | \$269,840.85 | \$138,885.36 |
| PA SOUTH | 15023435401 | 1532834 | 2ND ST | 557 | INSTALL 1174'-4/8" PMLP | 2ND ST | 129 | W N | 2016 | \$188,110.74 | \$213,451.23 | \$66,165.36 |
| PA SOUTH | 15023436200 | 1528117 | NEW STANTON - RT. 70 RELOCATION | 561 | INST. 915'-2" PLP | BAIR BV | 129 | NEW | 2015 | \$62,936.69 | \$58,573.26 | \$8,875.99 |
| PA SOUTH | 15023436700 | 1531715 | SR 21, SEC 10D | 561 | INSTALL 150'-2"PM-MP | GREEN VALLEY RD | 059 | CAR | 2015 | \$30,717.32 | \$40,567.35 | \$5,992.50 |
| PA CENTRAL | 15023437100 | 1533028 | STATE ROUTE 519 REPLACEMENT PROJECT | 557 | LAY 420'-2"PMP/110'-8"PMMP | RT 519 | 125 | HOU | 2016 | \$84,696.27 | \$102,379.11 | \$0.00 |
| PA CENTRAL | 15023437400 | 1533097 | MAWHINNEY ROAD RELOCATION PROJECT | 561 | DB 185'-4"PMP | MAWHINNEY RD | 125 | CEC | 2016 | \$71,850.60 | \$86,965.84 | \$708.58 |
| PA CENTRAL | 15023437700 | 1533101 | VALLEY BROOK COUNTRY CLUB RELOCATION | 561 | 450'-2" PHHP - VALLEY BROOK CC | 425 HIDDEN VALLEY RD | 125 | MCM | 2016 | \$22,208.31 | \$15,199.84 | |
| PA SOUTH | 15023438200 | 1533112 | 2321 - FRICK - REPL JO | 557 | INSTALL 505'-4" PMLP | FRICK ST | 129 | MT | 2016 | \$95,374.57 | \$97,719.46 | \$35,585.22 |
| PA SOUTH | 15023438401 | 1533121 | 2321 - NATIONAL - REPL JO | 557 | INSTALL 730'-6" PMMP | NATIONAL HWY | 051 | HOP | 2017 | \$191,049.04 | \$208,021.92 | \$95,388.32 |
| PA SOUTH | 15023438600 | 1533144 | 2321 - ELCO HILL | 557 | BORE 225'-8" PMMP | D-7090 | 125 | ELC | 2016 | \$87,982.05 | \$99,449.85 | \$577.98 |
| PA CENTRAL | 15023439500 | 1533257 | SYLVANIA REPLACEMENT PROJECT | 557 | LAY 1095'-2', 6" PLP | SYLVANIA | 125 | MCM | 2016 | \$76,295.57 | \$110,663.47 | \$45,942.77 |
| PA CENTRAL | 15023439900 | 1533313 | VAN EMAN REPLACEMENT PROJECT | 557 | LAY 280'-2"PLP | VAN EMAN | 125 | CAN | 2015 | \$45,481.69 | \$51,219.47 | \$25,011.73 |
| PA SOUTH | 15023440300 | 1533393 | C308 | 559 | INSTALL 2" POLY VALVE | N GALLATIN AV EX | 051 | LEM | 2016 | \$2,572.91 | \$4,739.73 | \$1,024.00 |
| PA CENTRAL | 15023440501 | 1533363 | HOGUE SUMMIT REPLACEMENT PROJECT | 557 | INSTALL 2445'-4" PMMP | HOGUE SUMMIT | 125 | EIG | 2016 | \$175,941.41 | \$157,575.60 | \$4,462.74 |
| PA CENTRAL | 15023440700 | 1533375 | SOUTHERN BELTWAY SECT 55B RELOCATION | 561 | LAY 425'-2"PMP | LAUREL HILL RD | 125 | MCD | 2018 | \$49,940.50 | \$53,901.70 | \$0.00 |
| PA CENTRAL | 15023442300 | 1533441 | MILLERS RUN RELOCATION PROJECT | 561 | LAY 1390'-6"PMP | MILLERS RUN RD | 125 | CEC | 2017 | \$241,931.80 | \$333,219.47 | \$6,800.51 |
| PA SOUTH | 15023445400 | 1533638 | 2321 - MEMORIAL - REPL JO | 557 | INSTALL 388'-4" PMLP | MEMORIAL DR | 051 | PER | 2016 | \$25,555.04 | \$34,682.00 | \$3,384.20 |
| PA SOUTH | 15023445900 | 1533688 | 2321 - BEDFORD - REPL JO | 557 | INST 206'-2"PMMP & 313'-2"PHMP | BEDFORD ST | 111 | BOY | 2015 | \$19,144.54 | \$24,409.98 | |
| PA CENTRAL | 15023446800 | 1316612 | WADE AVENUE REPLACEMENT PROJECT | 561 | LAY 150'-2"PMP | S WADE AV | 125 | WAS | 2015 | \$32,063.64 | \$9,498.65 | \$0.00 |

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|------------|-------------|---------|--------------------------------------|-----|--------------------------------|-------------------------|------|----------------|----------------|----------------|----------------|--------------|
| PA SOUTH | 15023447101 | 1533771 | 2321 - BROADWAY - REPL JO | 557 | INSTALL 940'- 4" & 6" PMLP | BROADWAY ST | 051 | BRO | 2016 | \$320,738.62 | \$311,898.16 | \$9,634.80 |
| PA SOUTH | 15023448400 | 1533937 | 2321 - FIRST - REPL JO | 557 | INST 243'-2" PMLP FIRST ST | FIRST | 111 | MEY | 2015 | \$6,753.96 | \$6,129.71 | |
| PA SOUTH | 15023448900 | 1533983 | 2321 - BELL - REPL JO | 557 | D.BORE 306'-2" PMLP | BELL ST | 129 | GRA | 2017 | \$24,462.25 | \$29,763.08 | \$3,671.66 |
| PA SOUTH | 15023450101 | 1534171 | 2321 - STATE STREET REPLACEMENT | 557 | INSTALL 5192'OF 2",4",6" | STATE | 125 | CHA | 2016 | \$980,220.48 | \$957,061.63 | \$8,900.28 |
| PA SOUTH | 15023450301 | 1534171 | 2321 - STATE STREET REPLACEMENT | 559 | INSTALL 1000'-6"PMMP | PHILLIPS ST | 125 | CHA | 2016 | \$122,565.26 | \$140,256.09 | \$160.80 |
| PA SOUTH | 15023450401 | 1534171 | 2321 - STATE STREET REPLACEMENT | 559 | INSTALL 380'-4" PMLP | REBECCA ST | 125 | CHA | 2016 | \$97,006.15 | \$97,624.31 | \$337.68 |
| PA CENTRAL | 15023451700 | 1635302 | FRANKLIN TERRACE BETTERMENT PROJECT | 559 | INSTALL 10'-2" PMMP | FRANKLIN TR | 125 | WAS | 2016 | \$5,890.68 | \$4,745.99 | \$2,411.02 |
| PA SOUTH | 15023451901 | 1534360 | LOVEDALE RD BRIDGE REPLACEMENT | 561 | BORE 275'-2" PMIP | LOVEDALE RD | 003 | ELI | 2018 | \$78,655.28 | \$143,530.18 | \$504.00 |
| PA CENTRAL | 15023452100 | 1534397 | 135 BOONE AVENUE BETTERMENT | 559 | INSTALL 120'-2" PMMP | BOONE AV | 125 | CAN | 2016 | \$9,212.37 | \$11,501.81 | \$338.58 |
| PA SOUTH | 15023453401 | 1533763 | 2321 - EAST MURPHY - REPL | 557 | INSTALL 1010'-4" PMMP | FREEMAN LN | 051 | CON | 2016 | \$160,447.06 | \$161,847.96 | \$8,486.22 |
| PA SOUTH | 15023453601 | 1533763 | 2321 - EAST MURPHY - REPL | 557 | INSTALL 3245'-4", 2" PMMP | E MURPHY AV | 051 | CON | 2016 | \$574,429.68 | \$659,885.54 | \$5,623.98 |
| PA CENTRAL | 15023454500 | 1534639 | CANONSBURG OFFICE COMPLEX - CPG 1570 | 561 | INSTALL 410'-4" PMMP | 597 CHARTIERS RUN RD | 125 | CEC | 2016 | \$97,242.11 | \$96,204.76 | \$1,402.92 |
| PA SOUTH | 15023454801 | 1528117 | NEW STANTON - RT. 70 RELOCATION | 561 | INST/UPRATE 4435'-2"/4" PMMP | PENNSYLVANIA AV | 129 | NEW | 2016 | \$459,499.88 | \$458,775.69 | \$9,870.85 |
| PA SOUTH | 15023455100 | 1534692 | EDGEWOOD GROVE | 561 | INST 216'-2" PMMP | SOUTH DR | 111 | SOM | 2016 | \$7,583.59 | \$4,911.20 | |
| PA SOUTH | 15023455900 | 1531035 | 2321 - LAUREL TERRACE - REPL JO | 557 | INSTALL 2997'-8",4",2" PMMP | BROWN ST | 051 | UNI | 2016 | \$463,730.44 | \$462,451.00 | \$174,672.50 |
| PA SOUTH | 15023456100 | 1531035 | 2321 - LAUREL TERRACE - REPL JO | 557 | INSTALL 4894'-4", 2" PMMP | SYLVANUS AV | 051 | UNI | 2016 | \$528,718.26 | \$599,259.33 | \$393,685.86 |
| PA SOUTH | 15023456400 | 1531715 | SR 21, SEC 10D | 561 | RELOCATE 825'-4"PM-MP | GLADE RUN RD | 059 | CAR | 2016 | \$107,979.11 | \$108,055.87 | \$3,272.67 |
| PA SOUTH | 15023456800 | 1532006 | 2321 - MORGANTOWN RD - REPL JO | 557 | INSTALL 2998'-4",2" PMMP | MORGANTOWN | 051 | UNI | 2016 | \$470,627.24 | \$468,084.36 | \$209,213.18 |
| PA SOUTH | 15023457000 | 1532006 | 2321 - MORGANTOWN RD - REPL JO | 557 | INSTALL 2628'-4",2" PMMP | MORGANTOWN | 051 | UNI | 2016 | \$324,677.89 | \$338,497.49 | \$20,429.40 |
| PA CENTRAL | 15023457200 | 1534760 | MORGAN HILL REPLACEMENT PROJECT | 557 | LAY 413'-2"PLP | MORGAN HILL | 003 | CUD | 2016 | \$43,168.14 | \$83,365.16 | \$17,028.00 |
| PA CENTRAL | 15023457800 | 1534805 | MORGANZA ROAD BETTERMENT PROJECT | 559 | INSTALL 4" CRITICAL VALVE | MORGANZA RD | 125 | CAN | 2016 | \$3,371.78 | \$3,018.40 | |
| PA EAST | 15024286000 | 1527623 | LINE 1655 REPLACEMENT | 559 | INSTALL LINE 1655S | 133 HAN | 2015 | \$4,060,490.00 | \$3,488,467.00 | | | |
| PA EAST | 15024286700 | 1427431 | CHURCH ST FARM TAP ELIMINATION | 557 | INST 935'2" PMMP(CHURCH/S SPR) | CHURCH RD | 133 | YOR | 2015 | \$92,092.63 | \$87,598.87 | \$28,594.42 |
| PA EAST | 15024287000 | 1527783 | CENTER ST RELOCATION | 561 | INSTALL 4" SS | CENTER ST | 133 | HAN | 2015 | \$15,476.03 | \$9,610.20 | \$902.88 |
| PA EAST | 15024287401 | 1424583 | YORK ST | 561 | INST 60'-8" PMMP | RUEL AV | 133 | HAN | 2015 | \$22,772.61 | \$42,879.90 | \$8,669.20 |
| PA EAST | 15024289100 | 1530349 | CRESTVIEW TRAILER PARK | 561 | INSTALL 4015'-2 PMP (EST ONLY) | CRESTVIEW DR | 133 | YOR | 2015 | \$386,393.52 | \$634,618.91 | \$471,332.31 |
| PA EAST | 15024289300 | 1528156 | STRABAN SHEETZ RELOCATE | 561 | RELOCATE 350'-6"PMMP | 30 CAMP LETTERMAN DR | 001 | GET | 2016 | \$21,600.01 | \$41,617.31 | \$0.00 |
| PA EAST | 15024289500 | 1528169 | 2421 - MAIN - REPL JO | 557 | INST 15'-4"PMIP | E MAIN ST | 001 | FAI | 2015 | \$24,122.68 | \$40,102.32 | \$19,875.75 |
| PA EAST | 15024290501 | 1317545 | (AOP) E MARKET ST PAVÉ (PENNDOT) | 557 | INS 6700'-4", 10" P & CSMP AOP | E MARKET ST | 133 | YOR | 2017 | \$2,339,140.03 | \$2,638,406.63 | \$950,360.89 |
| PA EAST | 15024290700 | 1528364 | PRIVATE DRIVE OFF SOUTH QUEEN ST | 559 | INSTALL 350'-2"PMIP | PRIVATE DR OFF QUEEN ST | 133 | YOR | 2015 | \$12,893.03 | \$17,712.53 | |
| PA EAST | 15024291700 | 1528504 | 2421 - GREENDALE - REPL JO | 557 | INSTALL -558'-2",8" PMMP | GREENDALE | 133 | YOR | 2015 | \$103,687.31 | \$122,496.86 | \$24,311.81 |
| PA EAST | 15024292500 | 1317545 | (AOP) E MARKET ST PAVE (PENNDOT) | 557 | INSTALL APPROX 7080'-2.4" AOP | E MARKET ST | 133 | YOR | 2016 | \$992,076.16 | \$1,061,422.11 | \$648,115.28 |
| PA EAST | 15024296600 | 1528992 | LLYOD MILLER | 559 | INSTALL 25'-2"PMP | 8 WELLESLEY COURT | 133 | YOR | 2015 | \$5,896.42 | \$4,085.57 | \$968.22 |
| PA EAST | 15024296700 | 1528997 | N PENN ST | 557 | INST.805'-4"PMMP&1460'-2"PMMP | N PENN ST | 133 | YOR | 2017 | \$456,479.97 | \$432,002.87 | \$475,528.26 |
| PA EAST | 15024296901 | 1529001 | 2421 - MAPLE - REPL JO | 557 | ACTIVE COR - E MAPLE ST INST | E MAPLE ST | 133 | MT | 2017 | \$262,874.88 | \$600,805.67 | \$472,136.96 |
| PA EAST | 15024297101 | 1529003 | 2421 - EAST - REPL JO | 557 | INSTALL 1902'-2" PMMP | N EAST ST | 133 | YOR | 2017 | \$99,814.60 | \$97,930.92 | \$0.00 |
| PA EAST | 15024297400 | 1529229 | LINCOLN HWY | 559 | INSTALL -270'-2" PMMP | 5434 LINCOLN HWY | 133 | HEL | 2016 | \$56,321.34 | \$60,395.53 | \$41,283.82 |
| PA EAST | 15024297800 | 1528504 | 2421 - GREENDALE - REPL JO | 557 | INSTALL SHORTSTOP | GREENDALE RD | 133 | YOR | 2015 | \$1,443.00 | \$0.00 | |
| PA EAST | 15024298100 | 1529364 | 2421 - GAY - REPL JO | 557 | REPLACE MAIN - LEAKAGE | GAY | 133 | DAL | 2015 | \$10,522.73 | \$8,707.65 | \$1,300.74 |
| PA EAST | 15024298300 | 1529378 | D10018 LEAK C194409 | 557 | INST 30'-8"WTHP | RISHEL HILL RD | 027 | BEL | 2015 | \$69,164.22 | \$81,070.33 | \$222.78 |
| PA EAST | 15024298601 | 1529383 | 2421 - LOUCKS - REPL JO | 557 | INST 3080'-8"PMMP | LOUCKS RD | 133 | YOR | 2018 | \$768,404.68 | \$938,853.65 | \$637,020.10 |
| PA EAST | 15024299100 | 1529437 | SR030 SEC 85 | 561 | RELOCATE 185'-4" PMMP | SR 030 | 133 | THO | 2016 | \$83,269.58 | \$112,666.56 | \$0.00 |
| PA EAST | 15024299700 | 1529487 | 2421 - CARLISLE - REPL JO | 557 | REPLACE CY1519 20'-4"WTMP | 6801 CARLISLE RD | 133 | DOV | 2015 | \$66,861.07 | \$13,603.69 | \$2,249.98 |
| PA EAST | 15024301500 | 1529712 | SR 94 RELOCATE | 561 | RELOCATE 75'-3"PMMP | 3654 CARLISLE PK | 001 | NOX | 2015 | \$15,579.93 | \$8,334.93 | |
| PA EAST | 15024303700 | 1424583 | YORK ST | 559 | INSTALL -395-8" PMMP | RUEL AV | 133 | HAN | 2015 | \$81,833.27 | \$69,240.33 | \$17,181.48 |
| PA EAST | 15024304600 | 1530169 | 2421 - SOUTHERN - REPL JO | 557 | INST 5140'-2", 6", 8" PMMP | SOUTHERN RD | 133 | YOR | 2015 | \$660,200.45 | \$772,567.75 | \$162,031.14 |
| PA EAST | 15024305101 | 1530306 | 2421 - VANDER - REPL JO | 557 | INSTALL 1455'-2" PMMP, 220'-6" | 519 VANDER AV | 133 | YOR | 2015 | \$329,166.16 | \$376,840.31 | \$326,928.48 |
| PA EAST | 15024306200 | 1530401 | SR 0116 SEC 030 PENNDOT PROJECT | 557 | INST: 640'-6" AND 620'-4"PMLP | SR 116 SEC 30 | 001 | MCS | 2016 | \$229,568.96 | \$361,012.27 | \$279,512.56 |
| PA EAST | 15024311400 | 1530866 | 2421 - CLUB HOUSE - REPL JO | 557 | INST. 4031'-4"PMIP | 990 CLUB HOUSE RD | 133 | YOR | 2017 | \$600,299.78 | \$320,852.89 | \$33,142.50 |
| PA EAST | 15024312700 | 1531031 | MCDONALD LN | 557 | INSTALL 270'-4" PLP | MCDONALD LN | 133 | YOR | 2015 | \$90,292.57 | \$74,765.35 | \$55,551.86 |
| PA EAST | 15024312900 | 1531034 | 2421 - LOUCKS - REPL JO | 557 | INST -4945'-8", 260'-6" PMMP | 1825 LOUCKS RD | 133 | YOR | 2016 | \$953,402.96 | \$989,844.92 | \$304,275.23 |
| PA EAST | 15024313200 | 1531054 | OAK HILL DR CRITICAL VALVE | 559 | INSTALL CRITICAL VALVE CH257 | OAK HILLS DR | 133 | HAN | 2016 | \$12,293.77 | \$10,543.81 | |
| PA EAST | 15024313400 | 1530874 | RAILROAD ST CORROSION REPLACE | 559 | INST 620' OF 4" CORR SHORT | RAILROAD ST | 027 | BEL | 2018 | \$128,369.27 | \$209,747.08 | \$50,192.48 |
| PA EAST | 15024314800 | 1531315 | GRADE 1 @ DAYS INN | 561 | INSTALL 10'-2" PMP | TORONITA STREET | 133 | MAN | 2015 | \$33,787.61 | \$108.91 | \$0.00 |
| PA EAST | 15024315600 | 1422042 | PM - D-1661 PHASE 1 | 559 | PM - D-1661 TEST AND TIE-IN | FARMTRAIL RD | 133 | YOR | 2016 | \$0.00 | \$410,074.56 | |
| PA EAST | 15024317300 | 1317859 | 2421 - S QUEEN ST (AC) | 557 | REPLACE MAIN - LEAKAGE | S QUEEN ST | 133 | DAL | 2015 | \$756,385.44 | \$668,280.37 | \$130,243.43 |
| PA EAST | 15024318900 | 1532094 | ALBEMARLE POPLAR PAVING | 557 | INST. 470' 4" PLP | S ALBEMARLE ST | 133 | YOR | 2015 | \$82,008.43 | \$102,730.90 | \$132,828.91 |
| PA EAST | 15024319100 | 1532094 | ALBEMARLE POPLAR PAVING | 557 | INSTALL 1337' 2" PMMP | S ALBEMARLE ST | 133 | YOR | 2015 | \$153,149.20 | \$186,586.04 | \$209,261.19 |

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|------------|-------------|---------|--|-----|--------------------------------|---------------------|-----|-----|------|----------------|----------------|--------------|
| PA EAST | 15024319700 | 1532247 | 2421 - OLD ORCHARD - REPL JO | 557 | INST WMSN SHORT STOPS | OLD ORCHARD | 133 | YOR | 2016 | \$8,881.40 | \$14,402.75 | |
| PA EAST | 15024320000 | 1532444 | PIEDMONT | 559 | INSTALL 318'-4"PMMP | PENNSYLVANIA AV | 133 | YOR | 2015 | \$68,425.45 | \$91,087.03 | \$30,405.61 |
| PA EAST | 15024322200 | 1532780 | 2421 - FREYSVILLE - REPL JO | 557 | INSTALL 80'-2"PMP | 3045 FREYSVILLE RD | 133 | RED | 2015 | \$9,261.45 | \$1,301.93 | |
| PA EAST | 15024322700 | 1532843 | 2421 - FARMTRAIL - REPL JO | 557 | PM - D-1661 PH.II REPLACEMENT | FARMTRAIL RD | 133 | YOR | 2016 | \$4,964,118.81 | \$5,999,479.57 | \$281,597.75 |
| PA EAST | 15024322900 | 1532885 | VALLEY RD EXT | 559 | INST 200'-2"PMMP | 506 VALLEY RD | 133 | YOR | 2015 | \$15,453.48 | \$33,463.14 | \$0.00 |
| PA EAST | 15024323100 | 1532903 | 2421 - WHITEFORD - REPL JO | 557 | INSTALL 2 WMSON S.S. | 1488 WHITEFORD RD | 133 | YOR | 2015 | \$15,035.30 | \$9,292.64 | \$0.00 |
| PA EAST | 15024324100 | 1533019 | 2421 - SMITH - REPL JO | 557 | INSTALL -2766'-2 & 4" PMMP | SMITH ST | 133 | YOR | 2016 | \$891,693.78 | \$1,029,323.80 | \$369,416.19 |
| PA EAST | 15024324300 | 1533023 | S ALLEN | 557 | INSTALL 2967'-2" PM | S ALLEN ST EA | 027 | STA | 2016 | \$321,258.81 | \$463,283.36 | \$253,478.94 |
| PA EAST | 15024324500 | 1533029 | 2421 - WOODLAND - REPL JO | 557 | REPLACE MAIN - LEAKAGE | WOODLAND | 133 | YOR | 2016 | \$506,631.15 | \$494,188.78 | \$176,817.68 |
| PA EAST | 15024324900 | 1533055 | CENTRE LN | 557 | INSTALL -2500'-2" PMMP | CENTER | 027 | STA | 2017 | \$539,177.36 | \$433,481.75 | \$223,440.73 |
| PA EAST | 15024325100 | 1533060 | 2451 - SMITHFIELD - REPL JO | 557 | INSTALL -1869'-2" PMMP | SMITHFIELD | 027 | STA | 2016 | \$86,943.57 | \$230,895.50 | \$116,516.11 |
| PA EAST | 15024325300 | 1533063 | PUGH ST | 557 | INSTALL -960'-4"&2" PMMP | S PUGH | 027 | STA | 2016 | \$119,221.13 | \$122,089.88 | \$25,406.42 |
| PA EAST | 15024325600 | 1533068 | KEMMERER | 557 | INSTALL -1489'-2" PMMP | KEMMERER RD | 027 | STA | 2016 | \$108,797.20 | \$215,429.18 | \$139,177.02 |
| PA EAST | 15024326001 | 1533075 | 2421 - WALNUT - REPL JO | 557 | INSTALL -1770'-2" PMMP | WALNUT ST | 133 | HAN | 2016 | \$659,558.82 | \$694,675.93 | \$241,268.30 |
| PA EAST | 15024328000 | 1533335 | 2421 - PRIORITY - REPL JO | 557 | INST 2-4"SS TO ABN 395'-4"WLP | PENNSYLVANIA AV | 133 | YOR | 2015 | \$15,235.91 | \$2,415.66 | |
| PA EAST | 15024328200 | 1533338 | 2421 - 3RD - REPL JO | 557 | INSTALL -3,565'-2" PMMP | 3RD ST | 001 | MCS | 2017 | \$421,286.91 | \$357,728.77 | \$154,000.11 |
| PA EAST | 15024328400 | 1533344 | STATION INLET VALVES | 559 | INST INLET VALVE ON R 5063 | KNIGHT RD | 001 | GET | 2017 | \$7,882.28 | \$11,202.12 | |
| PA EAST | 15024328600 | 1533076 | AXEMANN BYPASS VALVE | 559 | INSTALL OUTLET FIRE VALVE | AXEMANN RD | 027 | PLE | 2016 | \$25,192.81 | \$27,228.10 | \$0.00 |
| PA EAST | 15024328801 | 1533439 | 2421 - FREDERICK - REPL JO | 557 | INSTALL -1130'-6", 60'-4" PMMP | FREDERICK | 133 | HAN | 2016 | \$414,925.24 | \$447,138.73 | \$257,978.36 |
| PA EAST | 15024330200 | 1533526 | 2421 - CLARE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 865 CLARE LN | 133 | WIN | 2015 | \$10,174.94 | \$5,273.66 | \$1,349.64 |
| PA EAST | 15024331901 | 1533710 | 2421 - EDGAR - REPL JO | 557 | INST 1000'-2"PMMP, 853'-6"PMMP | EDGAR ST | 133 | YOR | 2016 | \$342,319.72 | \$337,817.65 | \$166,914.16 |
| PA EAST | 15024332100 | 1533719 | W KING ST - BRIDGE | 557 | INST 922'-6"PMMP,270'-6"CSMP | W KING ST | 133 | YOR | 2017 | \$431,415.28 | \$577,705.70 | \$111,678.87 |
| PA EAST | 15024333300 | 1533850 | HERRS RIDGE RD PAVING DRIVER | 557 | INST 3050'-2" PMMP | HERRS RIDGE RD | 001 | GET | 2016 | \$218,560.80 | \$297,838.29 | \$56,908.59 |
| PA EAST | 15024333700 | 1425431 | HAINES/WASHINGTON RELO | 561 | RELOCATE -560'-8" PMMP | HAINES RD | 133 | YOR | 2015 | \$44,159.55 | \$40,385.79 | \$0.00 |
| PA EAST | 15024334700 | 1422253 | FAIRFIELD STATION REBUIL | 559 | PM - FAIRFIELD STATION | RT 116 WEST | 001 | FAI | 2015 | \$0.00 | \$193.84 | |
| PA EAST | 15024335100 | 1534025 | COLEMAN RD RAIL ROAD | 561 | INST RELOCATE UNDER RAIL ROAD | COLEMAN RD | 001 | GET | 2017 | \$152,500.07 | \$161,762.61 | \$5,796.00 |
| PA EAST | 15024336100 | 1534069 | SR 2005 BORE RELO | 561 | INSTALL -650'-8" PLASTIC | HAINES RD | 133 | YOR | 2016 | \$90,464.21 | \$132,464.13 | \$8,316.00 |
| PA EAST | 15024336800 | 1319044 | (AC) LOCUST ST- REPL JO | 559 | INSTALL -152'-2" PMMP | PLEASANT ST | 133 | HAN | 2015 | \$19,266.73 | \$18,761.73 | \$11,949.08 |
| PA EAST | 15024337600 | 1534257 | SHILIOH BLOW DOWN VALVE | 559 | BUILD BLOWNDOWN STACK | SHILIOH RD | 027 | STA | 2016 | \$3,207.75 | \$3,198.32 | |
| PA EAST | 15024338101 | 1534329 | WILLOW RD - AC | 557 | INSTALL 986'-2"&1726'-6"PMMP | WILLOW RD | 133 | YOR | 2017 | \$621,700.51 | \$793,287.12 | \$484,087.56 |
| PA EAST | 15024339100 | 1534394 | 2421 - MAPLE - REPL JO | 557 | INSTALL 5000'-8",6",4" & 2"PMP | E MAPLE ST | 133 | DAL | 2016 | \$926,052.99 | \$896,082.29 | \$747,101.54 |
| PA EAST | 15024339800 | 1534463 | LAWSON CT | 557 | INSTALL 577'-2"PMMP | N EMIGS MILL RD | 133 | YOR | 2017 | \$48,094.32 | \$63,591.43 | \$19,664.98 |
| PA EAST | 15024340000 | 1534469 | W GAS AVE | 557 | INST -641'-2" & -1651'-4"PMLP | W GAS AV | 133 | YOR | 2017 | \$491,089.50 | \$585,804.68 | \$461,415.31 |
| PA EAST | 15024340201 | 1534480 | BALTIMORE PIKE | 557 | INST 2,500'-4" PMMP | BALTIMORE PK | 001 | GET | 2017 | \$383,005.74 | \$380,611.28 | \$0.00 |
| PA EAST | 15024341100 | 1534564 | 2421 - YORK - REPL JO | 557 | INSTALL 3481'-4" & 200'-2" PL | YORK RD | 133 | JAC | 2017 | \$628,600.48 | \$691,405.90 | \$263,877.91 |
| PA EAST | 15024342501 | 1530014 | GETTYSBURG MP BETTERMENT | 559 | INSTALL 1100'-6" WTHP PH3 | BOYS SCHOOL RD | 001 | GET | 2017 | \$471,940.90 | \$460,425.00 | \$588.00 |
| PA EAST | 15024342601 | 1530014 | GETTYSBURG MP BETTERMENT | 559 | INST45'-8"PHHP&19'-8" WTHP PH4 | BOYDS SCHOOL RD | 001 | GET | 2017 | \$5,277.14 | \$5,376.47 | |
| PA EAST | 15024342701 | 1530014 | GETTYSBURG MP BETTERMENT | 559 | INST 2100'-8" PMMP PH5 | BOYDS SCHOOL RD | 001 | GET | 2017 | \$888,670.42 | \$882,102.57 | \$0.00 |
| PA EAST | 15024342900 | 1534769 | WYNDHAM DRIVE AC | 557 | INST -5600' PMMP WYNDHAM DR AC | WYNDHAM | 133 | YOR | 2017 | \$499,044.81 | \$347,248.02 | \$85,035.27 |
| PA EAST | 15024343201 | 1534793 | SUSQUEHANNA TRAIL | 557 | SUSQUEHANNA TRAIL SOUTH | N MAIN ST | 133 | SHR | 2017 | \$1,224,346.21 | \$1,192,163.90 | \$49,184.37 |
| PA EAST | 15024343400 | 1534793 | SUSQUEHANNA TRAIL | 557 | SUSQUEHANNA TRAIL NORTH | S SUSQUEHANNA TRAIL | 133 | SHR | 2017 | \$1,199,686.37 | \$1,301,891.09 | \$179,915.61 |
| PA EAST | 15024343701 | 1534828 | E BOUNDARY AVE - ALLADIN | 557 | INST 1723'-2"PMMP&1348'-6"PMMP | E BOUNDARY AV | 133 | YOR | 2017 | \$711,196.71 | \$832,969.14 | \$833,712.78 |
| PA EAST | 16021366300 | 1636151 | MERCERSBURG LINE DAMAGE | 561 | LINE DAMAGE IIN MERCERSBURG | FORT LOUDON RD | 055 | MER | 2016 | \$5,419.64 | \$34,229.89 | |
| PA EAST | 16021368902 | 1636482 | FRANKLIN FARMS LEAK | 557 | REPLACE 2365'-4" PMMP | FRANKLIN FARM LN | 055 | CHA | 2018 | \$452,307.50 | \$487,394.63 | \$7,086.10 |
| PA EAST | 16021370400 | 1637066 | 1320 ENCROACHMENT | 561 | ENCROACHMENT 1320 LINCOLN WAY | 1320 LINCOLN WY E | 055 | FAY | 2016 | \$2,669.70 | \$1,661.85 | |
| PA EAST | 16021373700 | 1638292 | 2171 - POPLAR - REPL JO | 557 | INSTALL 485'-2" PMLP | POPLAR ST | 055 | MON | 2017 | \$57,105.30 | \$74,192.90 | \$28,779.83 |
| PA EAST | 16021376001 | 1639285 | MERC RT 16 | 557 | INS 488'-4"PMMP | MERC RT 16 | 055 | MER | 2017 | \$68,253.30 | \$101,928.84 | \$12,613.10 |
| PA EAST | 16021383001 | 1641791 | GRANT SHOOK RD | 557 | INSTALL -2550'-6"PMMP | GRANT SHOOK RD | 055 | GRE | 2019 | \$383,368.95 | \$511,517.32 | \$21,197.10 |
| PA EAST | 16021385400 | 1642425 | RT 30 SERVICE LEAK | 559 | INSTALL 2 SS TO FIX SERVICE | RT 30 SERVICE LEAK | 055 | FAY | 2017 | \$9,651.31 | \$10,965.64 | \$1,088.00 |
| PA CENTRAL | 16022100200 | 1641687 | SLEEPY HOLLOW RELOCATION PROJECT | 557 | INST 160'-6"PLP | SLEEPY HOLLOW RD | 003 | PIT | 2016 | \$32,043.75 | \$25,631.91 | \$0.00 |
| PA CENTRAL | 16022101300 | 1641073 | FERNLEAF MP REPLACEMENT PROJECT | 557 | INSTALL STOPPLE TO ABDN LP | FERNLEAF | 003 | PIT | 2019 | \$7,944.58 | \$4,304.19 | |
| PA NORTH | 16022102200 | 1314388 | Nobel Woods Development | 561 | OC 120'-2"PMP NOBLE WOODS DRV | NOBLE WOODS DR | 003 | COR | 2017 | \$16,266.35 | \$5,541.60 | |
| PA CENTRAL | 16022102800 | 1641844 | MCKINNEY REPLACEMENT | 557 | INSTALL -80'-4", 8" STEEL | MCKINNEY LN | 003 | PIT | 2017 | \$122,116.68 | \$309,139.33 | \$19,791.83 |
| PA NORTH | 16022105101 | 1641929 | PUMP STATION ROAD REPLACEMENT | 557 | 1,120'-6" PMMP & 920'-8" PMMP | PUMP STATION RD | 031 | RIM | 2017 | \$336,197.20 | \$188,057.43 | \$1,204.00 |
| PA NORTH | 16022106400 | 1641971 | 4TH AVENUE REPLACEMENT | 557 | INSTALL 40' OF 3' PMLP | 4TH AV | 007 | CON | 2016 | \$13,438.45 | \$5,156.50 | \$4,267.36 |
| PA CENTRAL | 16022106900 | 1641993 | 250 RYAN DR REPLACEMENT | 557 | INST 20'-6" PLP | RYAN | 003 | PIT | 2016 | \$12,132.73 | \$13,946.75 | \$0.00 |
| PA NORTH | 16022107100 | 1642002 | 2ND ST RELO BTWN HICKORY & PITT CIRCLE | 561 | RELOCATE -474' PMLP | 2ND ST | 073 | ELL | 2017 | \$114,685.03 | \$111,899.91 | \$60,417.18 |
| PA NORTH | 16022107300 | 1642003 | 2ND ST RELO BTWN FRANKLIN & DIVISION | 561 | RELOCATE 215' PMLP & 145' PMMP | 2ND ST | 073 | ELL | 2017 | \$109,376.10 | \$241,851.46 | \$180,186.52 |

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| PA NORTH | 16022107700 | 1533157 | 2231 - D-272 - REPL JO | 557 | PM - D-272 REPLACE POD-93 OUTL | D-272 | 007 | MON | 2017 | \$886,563.00 | \$495,731.21 | |
| PA NORTH | 16022108400 | 1640269 | FREEDOM ROAD REG | 561 | RELOCATE-300'-6"PMMP | FREEDOM RD | 019 | CRA | 2019 | \$58,699.48 | \$36,298.26 | \$186.93 |
| PA NORTH | 16022109000 | 1642087 | MT. NEBO RD RELOCATION | 561 | OC 1,825' OF 4" AND 6" PMMP | MT NEBO RD | 003 | SEW | 2017 | \$283,217.67 | \$327,959.21 | \$119,972.66 |
| PA CENTRAL | 16022109700 | 1635014 | BOWER HILL RD MP REPLACEMENT PROJECT | 557 | CONTINUE 14-0226903-00 | BOWER HILL RD | 003 | PIT | 2018 | \$49,817.53 | \$443,841.93 | \$7,095.35 |
| PA NORTH | 16022110300 | 1642131 | SHERMAN ALY BETTERMENT | 559 | INSTALL 200' - 2" PMMP | SHERMAN AL | 007 | BVR | 2016 | \$30,125.33 | \$24,695.74 | \$14,450.40 |
| PA CENTRAL | 16022111000 | 1642159 | 2221 - LETTIE HILL - REPL JO | 557 | EPLACE 90' BSLP WITH PMLP | LETTIE HILL ST | 003 | PIT | 2016 | \$31,307.53 | \$46,074.41 | \$20,240.76 |
| PA NORTH | 16022111400 | 1425544 | PM-D-1869 BIG BEAVER WEST REPLACEMENT | 559 | PM - R-3143-A MP OUTLET INST | WALLACE RUN RD | 007 | BVR | 2017 | \$0.00 | \$0.00 | |
| PA NORTH | 16022111600 | 1425544 | PM-D-1869 BIG BEAVER WEST REPLACEMENT | 559 | PM - R-3143-B IP OUTLET INST | WALLACE RUN RD | 007 | BVR | 2017 | \$0.00 | \$29,771.27 | |
| PA NORTH | 16022111900 | 1642188 | 2231 - 8TH - REPL JO | 557 | INSTALL 10'-2" PMLP | 1105 8TH ST | 007 | AMB | 2016 | \$6,949.65 | \$2,969.51 | \$1,396.50 |
| PA CENTRAL | 16022112400 | 1636405 | PM - D-1581 BAKER RD REPLACEMENT | 557 | PM - D-1581 BAKER RD REPLACE | MAYVIEW | 003 | BRI | 2016 | \$0.00 | \$64.02 | |
| PA NORTH | 16022112600 | 1642207 | BRIDGE RELOCATION AT TINADELL RD | 561 | RELOCATE--200' OF 4" PMMP | DERRICK RD | 083 | BRA | 2017 | \$9,693.53 | \$10,538.93 | |
| PA CENTRAL | 16022112803 | 1641934 | BETHEL CHURCH REPLACEMENT | 557 | INST 7425'-8", 6", 4" PMMP | BETHEL CHURCH | 003 | PIT | 2017 | \$2,374,336.54 | \$2,289,887.84 | \$2,065,386.69 |
| PA CENTRAL | 16022113000 | 1641934 | BETHEL CHURCH REPLACEMENT | 557 | INST 2010'-6" PMMP | GRAESER | 003 | PIT | 2017 | \$452,402.91 | \$391,036.89 | \$136,927.10 |
| PA CENTRAL | 16022113201 | 1641934 | BETHEL CHURCH REPLACEMENT | 559 | INST 425'-2" PMMP | PATHFINDER SCHOOL | 003 | BET | 2017 | \$97,474.69 | \$100,673.08 | |
| PA CENTRAL | 16022114700 | 1642430 | ORCHARD AVE REPLACEMENT | 557 | INSTALL 465'4" PMLP | ORCHARD | 003 | BET | 2017 | \$77,362.23 | \$73,528.13 | \$23,912.94 |
| PA NORTH | 16022115100 | 1642447 | S. MAIN ST. RELO (PENNDOT JV# 479) | 561 | DB AND OC 880'-4" PMIP | S MAIN ST | 073 | BES | 2017 | \$137,000.70 | \$138,787.55 | \$5,138.23 |
| PA NORTH | 16022115900 | 1531421 | PM - RIMERSBURG STATION REPLACEMENT | 559 | PM - RIMMERSBURG HP OUTLET | 800 PUMP STATION RD | 031 | RIM | 2016 | \$0.00 | \$93.80 | |
| PA NORTH | 16022116200 | 1642479 | HOWARD STREET REPLACEMENT | 557 | INSTALL 440' - 4" PMLP | HOWARD | 007 | AMB | 2017 | \$147,953.53 | \$167,832.91 | \$84,991.21 |
| PA NORTH | 16022116400 | 1642481 | ROUTE 168 BS REPLACEMENT PROJECT | 557 | INSTALL 2120' 4"-PLASTIC(AC) | ROUTE 168 | 007 | DAR | 2018 | \$121,522.65 | \$323,595.11 | \$31,126.39 |
| PA CENTRAL | 16022116600 | 1642482 | GREENBORO DRIVE - GAS LINE REPLACEMENT | 557 | REPLACE 355' BSLP WITH PMLP | GREENBORO | 003 | PIT | 2017 | \$74,545.15 | \$167,829.28 | \$118,734.56 |
| PA NORTH | 16022116900 | 1642483 | 3RD AVE BS REPLACEMENT PROJECT | 557 | INSTALL 120'-2"&720'-4" (AC) | 3RD AV | 007 | CON | 2018 | \$186,324.68 | \$163,185.81 | \$102,130.26 |
| PA NORTH | 16022117100 | 1642494 | EAST WASHINGTON STREET REPLACEMENT | 557 | OC -3030'-4,6&8"PMLP (AC) | E WASHINGTON ST | 073 | N-C | 2019 | \$605,708.97 | \$914,982.35 | \$290,554.43 |
| PA NORTH | 16022117300 | 1642497 | DAVIDSON STREET REPLACEMENT | 557 | OC-1200' OF 2" PMMP (AC) | DAVIDSON ST | 007 | ELL | 2018 | \$134,745.84 | \$129,738.46 | \$65,461.66 |
| PA NORTH | 16022117800 | 1642511 | MOUNT ALTON ROAD BRIDGE RELOCATION | 561 | RELOCATE BRIDGE CROSSING | MOUNT ALTON RD | 083 | LEW | 2019 | \$37,693.26 | \$91,257.21 | |
| PA NORTH | 16022118100 | 1641714 | S BRYANT AVE - REPLACEMENT JOB | 557 | INSTALL 2100'-4" PMMP (DPI) | S BRYANT AV | 003 | PIT | 2018 | \$642,760.91 | \$523,224.95 | \$358,618.72 |
| PA NORTH | 16022859000 | 1634893 | 2231 - PENHURST - REPL JO | 557 | INSTALL 590'-4" PMLP | PENHURST RD | 003 | PIT | 2016 | \$107,178.21 | \$155,726.11 | \$50,949.52 |
| PA NORTH | 16022859401 | 1634905 | BIG SEW CRK BRIDGE RELO 78416 | 561 | RELO 340' OF 4" PMMP | BIG SEWICKLEY CREEK RD | 003 | SEW | 2016 | \$86,331.21 | \$75,164.37 | \$0.00 |
| PA CENTRAL | 16022859900 | 1634917 | 2221 - FITZHUGH - REPL JO | 557 | INSTALL 140' 2" PLASTIC ML | FITZHUGH | 003 | PIT | 2016 | \$30,332.47 | \$36,155.78 | \$17,884.51 |
| PA NORTH | 16022860200 | 1634919 | BIG SEW CRK BRDG RELO AT WARNDAL BAYNE | 561 | INSTALL 425' OF 4" PMMP | BIG SEWICKLEY CREEK RD | 003 | SEW | 2016 | \$65,789.01 | \$78,085.20 | \$0.00 |
| PA NORTH | 16022860900 | 1634928 | WALNUT STREET REPLACEMENT | 557 | OC 2680'-4"PMMP/WALNUT ST | WALNUT | 073 | N-C | 2017 | \$407,878.24 | \$477,659.71 | \$396,013.19 |
| PA CENTRAL | 16022861102 | 1634931 | ARLINGTON AVE REPLACEMENT PROJECT | 557 | INSTALL 1962FT MDPE,ABN 1757FT | ARLINGTON AVE | 003 | PIT | 2018 | \$1,444,958.34 | \$1,481,227.89 | \$284,937.31 |
| PA NORTH | 16022861301 | 1534713 | 251 OAKVILLE RD | 559 | INSTALL 1,080'-4 & 6" PMMP | BLACKWOOD ST | 007 | BVR | 2016 | \$155,752.06 | \$201,827.37 | \$87,251.28 |
| PA NORTH | 16022861600 | 1634938 | NESHANNOCK BLVD REPLACEMENT PROJECT | 557 | OC 1506' OF 2" & 4" PMMP | NESHANNOCK BV | 073 | N-C | 2019 | \$318,010.12 | \$242,789.96 | \$54,161.16 |
| PA NORTH | 16022862200 | 1634976 | WARRENDALE BAKERSTOWN ROAD REPLACEMENT | 557 | INSTALL 7760'-8", 4" & 2" PMMP | WARRENDALE BAK RD | 003 | MAR | 2017 | \$1,553,651.31 | \$1,868,041.35 | \$1,241,459.55 |
| PA NORTH | 16022862600 | 1634990 | ROOSEVELT ROAD | 559 | LAY 460'-4" PMLP | ROOSEVELT RD | 003 | PIT | 2016 | \$37,612.00 | \$42,825.59 | \$7,955.00 |
| PA NORTH | 16022864201 | 1635032 | CHURCH ST & KEATING AVE REPLACEMENT | 557 | 2200'-4", 2080'-2" P-MP | KEATING | 031 | ST- | 2018 | \$303,994.34 | \$303,334.17 | \$20,057.89 |
| PA NORTH | 16022864701 | 1635065 | 6TH AVENUE REPLACEMENT | 557 | INSTALL 5760'-2,4,6,8" PMMP | 6TH | 007 | BVR | 2017 | \$1,236,999.89 | \$1,446,314.54 | \$1,025,072.54 |
| PA CENTRAL | 16022865500 | 1635114 | METHYL REPLACEMENT PROJECT | 557 | INSTALL 724'4" PMLP | METHYL ST | 003 | PIT | 2016 | \$231,795.95 | \$326,298.14 | \$189,462.96 |
| PA CENTRAL | 16022865700 | 1635135 | POTOMAC AVE REPLACEMENT PROJECT | 557 | INST 800'- 8"PLP | POTOMAC AV | 003 | PIT | 2016 | \$235,950.05 | \$254,819.48 | \$77,307.95 |
| PA CENTRAL | 16022866000 | 1635151 | 2221 - FAIRHAVEN - REPL JO | 557 | INSTALL 250' 6" PL ML | FAIRHAVEN | 003 | MCK | 2016 | \$41,539.61 | \$63,627.61 | \$39,528.65 |
| PA NORTH | 16022866200 | 1635153 | STONEY LONESOME ROAD REPLACEMENT | 557 | INST.1345'-2" PMLP | STONEY LONESOME RD | 123 | WAR | 2019 | \$137,924.14 | \$155,098.54 | \$20,604.61 |
| PA NORTH | 16022866400 | 1635159 | PENNSYLVANIA AVE REPLACEMENT | 557 | INSTALL 3750'-6" & 4" PMMP | PENNSYLVANIA | 007 | MON | 2017 | \$2,005,438.23 | \$1,647,324.74 | \$928,459.50 |
| PA NORTH | 16022867100 | 1635205 | 2231 - TURNPIKE - REPL JO | 557 | INSERT 370'-2" PMLP | TURNPIKE AV | 007 | BVR | 2016 | \$14,048.42 | \$21,983.28 | \$0.00 |
| PA NORTH | 16022868200 | 1635290 | BUTLER AVE REPLACEMENT | 557 | DB-616' OF 2" PMMP | BUTLER AV | 073 | ELL | 2016 | \$102,006.29 | \$57,357.71 | \$12,440.62 |
| PA CENTRAL | 16022868401 | 1635295 | NOBLESTOWN HP REPLACEMENT | 557 | INSTALL 95'-2" PHHP | NOBLESTOWN | 003 | PIT | 2016 | \$200,967.33 | \$195,807.30 | \$10,059.75 |
| PA NORTH | 16022869500 | 1533346 | SULLIVAN ROAD REPLACEMENT | 559 | REGULATOR PIPING INSTALL | SULLIVAN RD | 083 | BRA | 2016 | \$28,434.35 | \$19,763.90 | |
| PA CENTRAL | 16022869700 | 1635313 | HAYSON | 561 | INST 230'-2"PMLP MAIN | HAYSON | 003 | PIT | 2016 | \$34,093.08 | \$17,663.75 | \$0.00 |
| PA CENTRAL | 16022870100 | 1635349 | MILLER DRIVE | 557 | INSTALL 22'4" PMLP | MILLER | 003 | PIT | 2016 | \$3,781.34 | \$13,435.53 | |
| PA NORTH | 16022870602 | 1635376 | 2231 - BEECHWOOD - REPL JO | 557 | OC 150'-4"PMLP BEECHWOOD BV | 1033 BEECHWOOD BV | 073 | ELL | 2017 | \$28,490.90 | \$65,978.07 | \$5,571.75 |
| PA NORTH | 16022870900 | 1635392 | SR403 REPLACEMENT PROJECT | 557 | 920'-6", 175'-4", 115'-2"PMMP | FIRST ST | 063 | CLY | 2016 | \$228,561.89 | \$155,617.66 | \$29,551.68 |
| PA CENTRAL | 16022871200 | 1635415 | SALISBURY REPLACEMENT PROJECT | 557 | REPLACE MAIN - LEAKAGE | SALISBURY | 003 | PIT | 2016 | \$634,923.98 | \$691,212.39 | \$555,818.69 |
| PA CENTRAL | 16022871500 | 1635445 | WASHINGTON REPLACEMENT PROJECT | 557 | INSTALL 1440' OF 8" HDPE | WASHINGTON | 003 | BET | 2017 | \$796,143.27 | \$542,718.90 | \$173,918.10 |
| PA NORTH | 16022871900 | | | 559 | LAY 95'-2" PLP | BARR AV | 003 | PIT | 2016 | \$16,366.68 | \$37,388.54 | \$29,743.00 |
| PA CENTRAL | 16022872300 | 1529832 | LETICOE ST REPLACEMENT PROJECT | 557 | INSTALL 1571'2" 795'4" PMMP | LETICOE | 003 | PIT | 2016 | \$630,800.59 | \$519,208.53 | \$389,524.69 |
| PA NORTH | 16022872501 | 1635458 | N. BOUNDARY ROUNDABOUT | 561 | RELOCATE 1000'-6" PMMP | N BOUNDARY RD | 019 | CRA | 2016 | \$188,348.90 | \$232,493.95 | \$31,567.86 |
| PA CENTRAL | 16022873100 | 1635486 | JOSEPHINE ST REPLACEMENT PROJECT | 557 | INST 1650'-6", 4", 2"PLP | JOSEPHINE ST | 003 | PIT | 2016 | \$428,173.10 | \$457,167.47 | \$247,926.87 |
| PA CENTRAL | 16022874200 | 1635039 | Pittsburgh Mailing | 557 | INSTALL 10' 4" PHHP ML | FLEMING | 003 | MCK | 2016 | \$22,179.28 | \$39,183.89 | \$0.00 |
| PA NORTH | 16022874801 | 1635528 | ADDIS AVENUE REPLACEMENT | 557 | INSTALL 760'-2" PMIP | ADDIS AV | 007 | BVR | 2016 | \$80,825.69 | \$118,786.89 | \$42,812.39 |

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| PA NORTH | 16022875400 | 1635548 | 2231 - WARRENDALE BAYNE - REPL JO | 557 | INSTALL 880'-4" PMMP | WARRENDALE | 003 | WAR | 2016 | \$67,866.68 | \$55,917.26 | \$0.00 |
| PA CENTRAL | 16022876500 | 1635635 | MAYVILLE LP REPLACEMENT | 557 | LAY 1025 FT-4", 75'-3" PLP | 763 MAYVILLE AV | 003 | PIT | 2016 | \$393,263.98 | \$635,460.98 | \$487,792.35 |
| PA NORTH | 16022877700 | 1635660 | ABANDON 125'-2" PERRY TWP | 557 | ABND 125'-2" BS | DOC WALKER | 031 | PAR | 2016 | \$7,828.11 | \$4,358.47 | |
| PA NORTH | 16022878200 | 1635704 | SR 208 SALEM TOWNSHIP | 557 | 2400'-4" PM MP | SR 208 | 2031 | KNO | 2017 | \$111,053.24 | \$162,049.92 | \$18,041.34 |
| PA CENTRAL | 16022878500 | 1635727 | THIRD STREET REPLACEMENT PROJECT | 557 | REPLACE 1431' BSLP WITH PMLP | THIRD STREET | 003 | CLA | 2017 | \$572,861.90 | \$516,628.47 | \$277,059.43 |
| PA NORTH | 16022879200 | 1635742 | STATE STREET REPLACEMENT | 557 | 880'-4" PM MP | STATE ST | 031 | KNO | 2018 | \$202,047.53 | \$201,223.16 | \$150,477.04 |
| PA NORTH | 16022880000 | 1635747 | MOHAWK TRAIL REPLACEMENT | 557 | 185'-2" PLASTIC | MOHAWK | 019 | SLI | 2016 | \$22,040.04 | \$11,896.89 | |
| PA CENTRAL | 16022880301 | 1635352 | BRENTVIEW DRIVE REPLACEMENT | 557 | INSTALL 4,235'-2"&4" PMMP&LP | BRENTVIEW | 003 | PIT | 2019 | \$1,515,470.86 | \$2,676,725.52 | \$236,603.13 |
| PA NORTH | 16022881200 | 1635820 | LOCUST STREET | 557 | INSTALL 85' OF 2" PLP | LOCUST | 003 | COR | 2016 | \$15,296.72 | \$19,916.49 | \$11,718.00 |
| PA NORTH | 16022883700 | 1635897 | 2231 - WASHINGTON - REPL JO | 557 | LAY 33'-3" P | W WASHINGTON | 073 | N-C | 2016 | \$7,110.01 | \$7,040.45 | \$400.15 |
| PA NORTH | 16022883900 | 1635927 | D-4002 CROSS BORE | 561 | INSTALL -20'-6"CSMP | FORMAN ST | 083 | BRA | 2016 | \$13,574.11 | \$33,562.56 | \$4,442.79 |
| PA NORTH | 16022884001 | 1635921 | W WASHINGTON ST REPLACEMENT | 557 | OC -300'-4" & DB -345' PMMP | 4088 W WASHINGTON ST | 073 | N-C | 2016 | \$59,992.22 | \$51,546.37 | \$3,817.60 |
| PA NORTH | 16022884601 | 1635954 | SIX POINTS REGULATR REPLACEMENT | 557 | 4160'-8", 840'-2" PH, 1280'-8 | DUNKLE RD | 019 | EAU | 2019 | \$726,743.26 | \$1,019,160.53 | \$546.00 |
| PA NORTH | 16022886000 | 1532709 | PENNSYLVANIA AVENUE REPLACEMENT | 557 | INST 7,680'PMMP,PMLP,PHHP | PENNSYLVANIA AV | 123 | WAR | 2017 | \$966,568.39 | \$1,187,345.04 | \$580,683.82 |
| PA NORTH | 16022887801 | 1636019 | 5TH STREET REPLACEMENT | 557 | INSTALL 680'-4" & 440'-2" PMMP | 5TH ST | 007 | DAR | 2017 | \$148,784.73 | \$109,586.33 | \$25,711.52 |
| PA NORTH | 16022888200 | 1636044 | HAMILTON ST AMRP | 557 | INSTALL 6,150' 4" & 2" PMMP | HAMILTON | 073 | N-C | 2019 | \$938,872.13 | \$1,075,709.80 | \$340,533.72 |
| PA CENTRAL | 16022890800 | 1636088 | CASTLE SHANNON BLVD REPLACEMENT | 557 | INSTALL 280' 4" PMLP | CASTLE SHANNON BV | 003 | PIT | 2016 | \$33,269.56 | \$89,841.14 | \$24,848.83 |
| PA CENTRAL | 16022892700 | 1636146 | 2221 - CROSBY - REPL JO | 557 | INST 297'-2" LP MAIN | CROSBY | 003 | PIT | 2016 | \$49,796.69 | \$40,917.97 | \$13,347.72 |
| PA CENTRAL | 16022893100 | 1636155 | IRISHTOWN REPLACEMENT PROJECT | 557 | INST 9,002'-8", 6", 4" PMMP | IRISHTOWN | 003 | BET | 2017 | \$1,311,882.34 | \$2,040,677.73 | \$806,916.52 |
| PA CENTRAL | 16022893500 | 1636158 | LIBRARY ROAD AREA REPLACEMENT | 557 | INSTALL 3972' - 2", 4" PMMP | LIBRARY | 003 | SPA | 2017 | \$714,210.96 | \$930,182.74 | \$533,211.19 |
| PA NORTH | 16022893700 | 1425626 | PM - REG 4613 REBUILD | 559 | PM - CENTER GRANGE POD OUTLET | CENTER GRANGE | 007 | MON | 2016 | \$0.00 | \$872.06 | |
| PA NORTH | 16022894300 | 1636174 | OLD PITTSBURGH RD REPLACEMENT PROJECT | 557 | INSTALL 12263' OF 2" & 4" PMMP | OLD PITTSBURGH RD | 073 | N-C | 2017 | \$724,424.45 | \$840,692.24 | \$74,489.07 |
| PA CENTRAL | 16022895201 | 1636181 | ALGOMA REPLACEMENT PROJECT | 557 | INSTALL 1,066'-6" PMLP | ALGOMA | 003 | PIT | 2018 | \$168,825.56 | \$272,881.04 | \$85,855.42 |
| PA CENTRAL | 16022896400 | 1636206 | BASSLER STREET MP PROJECT | 557 | INSTALL 3305' - UPRATE 9380' | BASSLER | 003 | PIT | 2017 | \$1,027,561.63 | \$1,290,630.22 | \$529,357.91 |
| PA CENTRAL | 16022897200 | 1529219 | MCELHENY REPLACMENT PROJECT | 557 | INST 2665'-4" PMMP | MCELHENY | 003 | SPA | 2019 | \$521,903.01 | \$1,138,351.63 | \$151,372.97 |
| PA NORTH | 16022898000 | 1636316 | ALLEGHENY AVE | 557 | INSTALL 590'-6"PLP 80'-8"PLP | ALLEGHENY AV | 003 | PIT | 2016 | \$154,776.17 | \$184,402.06 | \$101,438.03 |
| PA NORTH | 16022899500 | 1636345 | D-22 @ WEST LIBERTY RD REPLACEMENT | 557 | 1720'-8", 40'-6" PHHP, 20'-6"CS | W LIBERTY | 019 | SLI | 2016 | \$191,770.45 | \$195,968.84 | |
| PA CENTRAL | 16022899700 | 1636347 | 2221 - BEEDLE - REPL JO | 557 | INSTALL 365'-2" PLP MAIN | BEEDLE | 003 | PIT | 2016 | \$21,192.64 | \$37,592.73 | \$3,004.84 |
| PA NORTH | 16022900300 | 1636365 | BLACKHAWK RD BETTERMENT | 559 | INSTALL 10'-4" PMP | BLACKHAWK RD | 007 | BVR | 2016 | \$24,662.30 | \$14,724.03 | \$1,946.53 |
| PA NORTH | 16022900700 | 1636371 | COMPANY LOT R-645 POD REPLACEMENT | 557 | 1240'-8", 720'-6", 960'-4"PLP | HUNTER WAY | 031 | NW- | 2018 | \$635,327.88 | \$769,024.57 | \$564,565.00 |
| PA CENTRAL | 16022902100 | 1637885 | CONNOR RD MP REPLACEMENT | 557 | LAY 1300'-8"P,40'-2"P,40'-CSMP | CONNOR RD | 003 | PIT | 2019 | \$576,946.36 | \$781,871.58 | \$173,405.48 |
| PA NORTH | 16022902801 | 1636512 | D-22 @ BOOZEL ROAD REPLACEMENT | 557 | INSTALL 1680'-8" PH HP | BOOZEL RD | 019 | SLI | 2017 | \$174,212.53 | \$204,350.42 | \$5,835.00 |
| PA CENTRAL | 16022903800 | 1636543 | MONASTERY AVE REPLACEMENT | 557 | INSTALL 405'-2" PMMP | MONASTERY | 003 | PIT | 2016 | \$105,066.92 | \$105,035.50 | \$35,935.61 |
| PA NORTH | 16022904000 | 1636562 | S.R. 68 SUNFLOWER ROAD REPLACEMENT | 557 | INSTALL 3920'-4" & 920'-2" PMMP | SUNFLOWER RD | 007 | ROC | 2017 | \$608,787.50 | \$606,287.01 | \$366,253.92 |
| PA CENTRAL | 16022904500 | 1636581 | PASADENA REPLACEMENT PROJECT | 557 | INSTALL 599' OF 4" PLP | PASADENA | 003 | PIT | 2016 | \$159,480.89 | \$170,872.04 | \$176,142.72 |
| PA NORTH | 16022904800 | 1636584 | LONG LANE EAST REPLACEMENT PROJECT | 557 | INSTALL 760'-4" PM LP | LONG LANE EAST | 031 | RIM | 2017 | \$47,913.60 | \$62,698.77 | \$156.98 |
| PA NORTH | 16022906900 | 1636653 | 2231 - 7TH - REPL JO | 557 | INSTALL 160'-4" PMLP | 7TH AV | 007 | BVR | 2016 | \$81,430.74 | \$189,425.45 | \$68,301.43 |
| PA NORTH | 16022909800 | 1636759 | DEER LANE EXTENSION REPLACEMENT | 557 | INSTALL 2000'-4" PMP | DEER LN | 007 | ROC | 2017 | \$312,391.32 | \$366,630.29 | \$79,515.23 |
| PA NORTH | 16022910200 | 1636765 | WATT STREET REPLACEMENT | 557 | LAY 280'-6" PMLP | WATT | 003 | COR | 2017 | \$73,121.75 | \$93,171.59 | \$70,941.61 |
| PA NORTH | 16022910401 | 1636766 | WEST WASHINGTON STREET REPLACEMENT | 557 | OC 1600'6",2030'4",10'2" PMLP | WASHINGTON | 073 | N-C | 2017 | \$407,763.30 | \$371,376.25 | \$62,732.51 |
| PA CENTRAL | 16022910600 | 1533257 | SYLVANIA REPLACEMENT PROJECT | 557 | INSTALL 49'-2" PLP | SYLVANIA | 003 | PIT | 2016 | \$5,770.70 | \$0.00 | \$0.00 |
| PA NORTH | 16022912200 | 1636983 | 7TH STREET EXTENTION | 559 | 160'- 2" PMMP | SEVENTH ST | 063 | CLY | 2016 | \$15,534.17 | \$9,359.99 | \$1,056.00 |
| PA NORTH | 16022914500 | 1637060 | CHURCH AVE GEN. CORROSION | 557 | INSTALL 550'-4" PLP | CHURCH AV | 003 | PIT | 2016 | \$131,479.39 | \$143,195.70 | \$49,477.62 |
| PA CENTRAL | 16022914700 | 1637067 | MCMURRAY ROAD SL REPLACEMENT | 557 | REPLACE 457' WIMP WITH PMMP | 61 MCMURRAY RD | 003 | BET | 2016 | \$74,607.71 | \$57,580.57 | \$245.28 |
| PA NORTH | 16022915400 | 1532732 | FULLER AVENUE BTWN SR 3005 & ARCH ST | 557 | INSTALL 150'-2" PMMP | FULLER AV | 123 | WAR | 2016 | \$10,371.48 | \$16,643.57 | \$3,810.90 |
| PA NORTH | 16022915900 | | | 559 | INSTALL 330'-2" P-LP | RAILROAD ST | 005 | OAK | 2016 | \$18,910.88 | \$12,848.68 | \$1,300.00 |
| PA NORTH | 16022916000 | 1637007 | 9 1ST ST -BESSEMER | 557 | OC 308'-4"PMMP -1ST ST -BESSE | 9 1ST | 073 | BES | 2016 | \$43,519.78 | \$42,353.10 | \$3,232.90 |
| PA CENTRAL | 16022916600 | 1637217 | HAYSON AND RED OAK | 561 | INSTALL 230'-2" PMLP | HAYSON | 003 | PIT | 2016 | \$14,861.02 | \$5,623.52 | |
| PA NORTH | 16022917401 | 1637299 | 2238 - MINARD RUN IP UPGRADE | 557 | -1880'-8"PMMP, 300'-2"PMMP | 811 SOUTH AV | 083 | BRA | 2017 | \$228,875.47 | \$406,033.16 | \$57,008.59 |
| PA NORTH | 16022918100 | 1637312 | HAZEL AVE REPLACEMENT & PTV | 557 | OC1337'PMLP,1847PMMP&1009'PTV | HAZEL AV | 073 | ELL | 2017 | \$557,568.15 | \$807,948.19 | \$476,851.52 |
| PA NORTH | 16022918300 | 1637320 | CONGRESS STREET REPLACEMENT | 557 | INSTALL 620'-6" PMLP | CONGRESS ST | 083 | BRA | 2018 | \$192,434.86 | \$179,065.31 | \$166,016.07 |
| PA NORTH | 16022918701 | 1637331 | LAWSONHAM ROAD REPLACEMENT | 557 | INSTALL -2,800'-2" PE MP | LAWSONHAM RD | 031 | RIM | 2018 | \$351,859.30 | \$366,020.47 | \$103,607.25 |
| PA NORTH | 16022919300 | 1637350 | KECK AVENUE REPLACEMENT | 557 | 1360'-4", 10'-3" & 200'-2" PMLP | KECK AV | 031 | NW- | 2017 | \$171,365.74 | \$189,973.16 | \$129,124.07 |
| PA NORTH | 16022919801 | 1637363 | BAKER STREET REPLACEMENT PROJECT | 557 | 1,480'-4" & 40'-2" PMLP | BAKER ST | 031 | RIM | 2017 | \$215,812.34 | \$244,031.55 | \$169,022.52 |
| PA NORTH | 16022920800 | 1637456 | CAMP HORNE RELOCATION | 561 | CAMP HORNE RELOCATION 200'6"PL | CAMP HORNE ROAD | 003 | PIT | 2016 | \$58,370.77 | \$39,668.03 | \$0.00 |
| PA CENTRAL | 16022921900 | 1637469 | CRANE AVENUE ABANDONMENT/INSTALL | 559 | CRANE AVE - INSTALL 100'2"PMMP | CRANE | 003 | PIT | 2016 | \$17,953.99 | \$29,893.04 | \$18,031.43 |
| PA NORTH | 16022922000 | 1635832 | REILLY FARM | 561 | LAY 880'-2" PMMP FOR REILLY F | REILLY FARM | 003 | PIT | 2017 | \$98,230.33 | \$77,842.31 | \$369.60 |
| PA NORTH | 16022922400 | 1637546 | 2231 - MARS VALENCIA - REPL JO | 557 | INSERT 310'-1.25" PMMP | 449 MARS VALENCIA RD | 019 | BUT | 2016 | \$20,977.53 | \$15,647.04 | \$1,887.50 |

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| PA NORTH | 16022924101 | 1637655 | PARKER FIREHALL | 557 | 400'-2" P-MP | WAYNE | 005 | PAR | 2016 | \$56,959.28 | \$60,911.17 | \$20,184.26 |
| PA NORTH | 16022924800 | 1637696 | S. EUCLID REPLACEMENT PROJECT | 557 | LAY 720'-4" PMMP | S EUCLID | 003 | PIT | 2017 | \$184,710.15 | \$201,590.58 | \$126,105.98 |
| PA NORTH | 16022926400 | 1637790 | CAMP MEETING RD EXT REPLACEMENT | 557 | INSTALL 400' OF 4" PMMP | CAMP MEETING RD | 003 | SEW | 2016 | \$52,397.41 | \$83,562.47 | \$7,681.42 |
| PA CENTRAL | 16022926700 | 1637868 | 2221 - STEUBENVILLE - REPL JO | 557 | INST 130'-4" PIP MAIN | STEUBENVILLE | 003 | OAK | 2016 | \$60,778.70 | \$142,610.83 | \$58,949.03 |
| PA CENTRAL | 16022927400 | 1636432 | GILKESON RD MP EXPANSION - LP ABANDON | 557 | 3545'-8", 15'-6", 2'45'-2P | GILKESON RD | 003 | PIT | 2017 | \$1,452,178.93 | \$1,613,999.16 | \$894,401.62 |
| PA NORTH | 16022927600 | 1637880 | 2238 - DERRICK RD AREA UPGRADE | 557 | -5000'-2PMPMP UPGRATE-2800' | DERRICK RD | 083 | BRA | 2018 | \$383,180.12 | \$310,856.02 | \$92,700.59 |
| PA NORTH | 16022927800 | 1637882 | 2238 - BARBOUR ST AREA UPGRADE | 557 | INSTALL-60'4"PMMP, 3000'-2"PMP | BARBOUR ST | 083 | BRA | 2017 | \$353,753.68 | \$430,582.68 | \$346,930.37 |
| PA NORTH | 16022928000 | 1637884 | OLD BUTLER RD-SHENANGO TWP STORM PROJE | 561 | OC 20'-2"/ 25'-4" PMMP | ROOSEVELT | 073 | N-C | 2016 | \$31,502.43 | \$23,451.54 | \$1,359.00 |
| PA CENTRAL | 16022928402 | 1533371 | BETTY RAE REPLACEMENT PROJECT | 559 | INS 575'-4" PMMP,100'-8" ST | BETTY RAE DR | 003 | PIT | 2018 | \$345,706.21 | \$417,695.67 | \$5,989.89 |
| PA NORTH | 16022929000 | 1635876 | CROWS RUN ROAD UPGRADE | 561 | LAY 1500'-8" PHHP | OHIO RIVER BV | 007 | FRE | 2016 | \$359,959.53 | \$600,761.13 | \$241,573.63 |
| PA NORTH | 16022929500 | 1637988 | LOOKER MOUNTAIN TRAIL MP EXTENSION | 559 | EXTEND 2" MP MAINLINE | LOOKER MOUNTAIN TL | 083 | BRA | 2017 | \$74,301.83 | \$124,550.70 | \$1,768.00 |
| PA CENTRAL | 16022929900 | 1533573 | SIPE ROAD REPLACEMENT PROJECT | 559 | INSTALL 921'-2" PMMP | SIPE & LAUREL RIDGE | 003 | COR | 2017 | \$58,725.21 | \$94,115.88 | \$10,384.26 |
| PA NORTH | 16022930400 | 1635876 | CROWS RUN ROAD UPGRADE | 561 | RELOCATE 450'-8" PHHP | CROWS RUN RD | 007 | FRE | 2016 | \$188,190.54 | \$158,192.73 | |
| PA CENTRAL | 16022931001 | 1636133 | HABERMAN REPLACEMENT PROJECT | 557 | 5743 ABANDON 4745 | MICHIGAN AV | 003 | PIT | 2019 | \$1,369,066.65 | \$1,318,497.80 | \$811,786.52 |
| PA NORTH | 16022933000 | 1638095 | OLD PITTSBURGH RD HP REPLACEMENT | 557 | OC -1330'-10" CSHP | OLD PITTSBURGH RD | 073 | N-C | 2017 | \$670,651.24 | \$511,736.12 | \$152,199.61 |
| PA NORTH | 16022934000 | 1638139 | 2231 - BIRMINGHAM - REPL JO | 557 | INSTALL 680' - 4" PLP | S BIRMINGHAM AV | 003 | PIT | 2016 | \$130,194.41 | \$164,310.13 | \$0.00 |
| PA NORTH | 16022934300 | 1638177 | PENHURST ROAD REPLACEMENT PROJECT | 557 | INSTALL 500'-2" PMMP | PENHURST | 003 | PIT | 2016 | \$78,735.08 | \$68,285.38 | \$24,125.22 |
| PA CENTRAL | 16022934600 | 1638179 | OTILLIA BS REPLACEMENT PROJECT | 557 | REPLACE 946' MAIN - LEAKAGE | OTILLIA | 003 | PIT | 2017 | \$249,125.34 | \$139,281.78 | \$61,634.85 |
| PA NORTH | 16022934800 | 1638180 | 200 NEVILLE RD | 559 | INSTALL 7'-2" CSHP | 200 NEVILLE | 003 | PIT | 2015 | \$3,833.91 | \$4,352.30 | |
| PA NORTH | 16022935201 | 1638189 | 4 MILE RUN BRIDGE REPLACEMENT | 561 | 545'-6"PMMP RELOCATION | SR 6 | 123 | SHE | 2018 | \$92,838.15 | \$87,102.69 | \$7,901.00 |
| PA NORTH | 16022935700 | 1638228 | SR 0038 PLASTIC EXPOSURE REMEDIATION | 559 | 800'-4" PMMP, & 480'-2" PMMP | ONIEDA VALLEY RD | 019 | N-W | 2017 | \$73,432.53 | \$147,519.04 | \$4,173.81 |
| PA CENTRAL | 16022936000 | 1313838 | NEW BRIGDEVILLE REGULATOR STATION | 557 | REPLACE 375# INLET MAINLINE | WASHINGTON PK | 003 | BRI | 2017 | \$154,234.14 | \$504,300.45 | |
| PA CENTRAL | 16022936200 | 1313838 | NEW BRIGDEVILLE REGULATOR STATION | 557 | REPLACE 200# OUTLET MAINLINE | WASHINGTON PK | 003 | BRI | 2017 | \$24,026.70 | \$73,803.38 | |
| PA CENTRAL | 16022936500 | 1313838 | NEW BRIGDEVILLE REGULATOR STATION | 557 | REPLACE 60# OUTLET MAINLINE | WASHINGTON PK | 003 | BRI | 2017 | \$18,911.70 | \$5,804.04 | |
| PA CENTRAL | 16022936700 | 1313838 | NEW BRIGDEVILLE REGULATOR STATION | 557 | REPLACE 50# OUTLET MAINLINE | WASHINGTON PK | 003 | BRI | 2017 | \$24,117.70 | \$5,950.47 | |
| PA CENTRAL | 16022937100 | 1532779 | DAUPHIN STREET - MAINLINE REPLACEMENT | 561 | DAUPHIN STREET - RELOC. PIPE | DAUPHIN ST | 003 | PIT | 2016 | \$14,283.99 | \$33,316.61 | |
| PA NORTH | 16022937500 | 1638427 | HARDING ST REPLACEMENT | 557 | INSTALL 1480'-2" PMMP | HARDING AV | 083 | BRA | 2016 | \$45,840.48 | \$74,807.06 | \$24,996.21 |
| PA NORTH | 16022937800 | 1638429 | FAIROAKS ST REPLACEMENT | 557 | INSTALL 520'-2" PMMP | FAIROAKS ST | 003 | WEX | 2017 | \$75,776.50 | \$45,164.98 | \$42,940.13 |
| PA NORTH | 16022938100 | 1638457 | SR1001 PLASTIC EXPOSURE REMEDIATION | 559 | SR1001'-2" PMMP | SR 1001 | 019 | EML | 2016 | \$16,671.39 | \$5,952.35 | |
| PA NORTH | 16022938300 | 1637227 | MERCER RD SYSTEM PLANNING -450'-6"PMMP | 559 | OC 550'-6"PMMP - MERCER RD | MERCER RD | 073 | N-C | 2017 | \$77,022.28 | \$87,766.93 | \$16,066.02 |
| PA NORTH | 16022939300 | 1638491 | 2239 - EAST ST REPLACEMENT | 557 | INSTALL -400'-4"PMPLP | EAST | 123 | WAR | 2017 | \$21,730.95 | \$20,931.63 | \$1,317.94 |
| PA CENTRAL | 16022940500 | 1638550 | CHERRYDELL DRIVE REPLACEMENT | 557 | INSTALL APPROX 9'6"PMPLP | CHERRYDELL DR | 003 | PIT | 2016 | \$6,799.49 | \$1,507.29 | |
| PA CENTRAL | 16022940700 | 1638556 | PROSPECT REPLACEMENT PROJECT | 557 | INST 1155'-4" PLP | PROSPECT | 003 | PIT | 2017 | \$279,578.73 | \$431,146.52 | \$13,547.30 |
| PA CENTRAL | 16022941100 | 1638560 | BELTZHOOVER REPLACEMENT PROJECT | 557 | INSTALL 1415'-6", 4", 2" PMLP | BELTZHOOVER | 003 | PIT | 2017 | \$455,822.34 | \$422,293.66 | \$238,991.34 |
| PA NORTH | 16022941500 | 1638577 | CRESCENT HEIGHTS AMRP - REPLACEMENT | 557 | LAY 9,300'-2" & 4,670'-8" PMMP | CRESCENT HEIGHTS | 007 | N-B | 2017 | \$2,150,797.43 | \$2,599,047.16 | \$1,086,222.44 |
| PA CENTRAL | 16022942300 | 1638609 | 2221 - SHAW - REPL JO | 557 | INSTALL 1426" PMLP | SHAW AV | 003 | CLA | 2016 | \$25,005.95 | \$43,475.45 | \$957.90 |
| PA CENTRAL | 16022943200 | 1638638 | BAPTIST RD HP REPLACEMENT PROJECT | 557 | INSTALL 7,190'-8" PHHP | BAPTIST RD | 003 | BET | 2017 | \$1,575,657.50 | \$3,434,066.31 | \$876,497.84 |
| PA NORTH | 16022944001 | 1638660 | FRANKLIN AVENUE REPLACEMENT | 557 | INSTALL 2000'-2 & 4" PMMP | FRANKLIN AV | 007 | MON | 2018 | \$313,705.36 | \$284,249.43 | \$160,756.32 |
| PA CENTRAL | 16022944200 | 1638663 | JOSEPHINE REPLACEMENT PROJECT | 557 | INST 2750FT -4"PMPE | JOSEPHINE | 003 | PIT | 2017 | \$941,053.42 | \$832,205.69 | \$654,086.54 |
| PA CENTRAL | 16022944500 | 1638789 | GILKESON RD MP LATERALS | 559 | INSTALL 3 LATERALS | GILKESON RD LATERALS | 003 | PIT | 2016 | \$142,842.79 | \$200,870.58 | \$35,122.62 |
| PA NORTH | 16022945600 | 1638774 | D-86 REPLACEMENT | 557 | INSTALL 640'-8" PHHP | D-86 | 007 | ROC | 2018 | \$122,509.43 | \$167,097.00 | |
| PA CENTRAL | 16022946900 | 1638875 | SCOTT RD RELOCATION | 561 | SCOTT RD RELOCATE 110'2"PMMP | SCOTT RD | 003 | PIT | 2016 | \$3,798.50 | \$2,381.25 | |
| PA NORTH | 16022947300 | 1638877 | 2231 - FLORENCE - REPL JO | 557 | INSERT 30'-3"PMPLP | FLORENCE ST | 073 | N-C | 2016 | \$25,900.91 | \$9,328.80 | \$957.80 |
| PA NORTH | 16022947902 | 1638895 | DUFF RD REPLACEMENT PROJECT | 557 | INSTALL 5600' 6' 4" & 2" PMMP | DUFF RD | 003 | SEW | 2017 | \$919,716.29 | \$763,793.23 | \$210,588.43 |
| PA NORTH | 16022948200 | 1638902 | MAIN STREET REPLACEMENT | 557 | OC-2914' OF 2 & 4" PMP | MAIN ST | 073 | BES | 2017 | \$357,482.98 | \$340,130.66 | \$76,421.37 |
| PA CENTRAL | 16022948900 | 1638980 | CHERRYVALE REPLACEMENT PROJECT | 557 | INST 350'-6"PLP | CHERRYVALE DR | 003 | PIT | 2016 | \$74,859.08 | \$32,740.06 | \$3,193.00 |
| PA NORTH | 16022949801 | 1639034 | | 559 | INSTALL APPROX 200'-2"PMMP | 108 NORTH AV | 003 | SEW | 2017 | \$41,293.71 | \$30,029.25 | \$3,577.70 |
| PA CENTRAL | 16022951000 | 1639191 | LILLIAN BS SPLIT REPLACEMENT | 557 | INSTALL 545' AND ABN 383' | LILLIAN | 003 | PIT | 2016 | \$164,856.25 | \$197,999.98 | \$119,779.15 |
| PA CENTRAL | 16022951700 | 1639220 | LEBANON AVE | 561 | RELOCATE 60'-3"PLP | FLORIDA AV | 003 | PIT | 2016 | \$7,575.21 | \$815.83 | |
| PA NORTH | 16022952300 | 1639262 | LAUREL DRIVE | 557 | INSTALL 770' - 2" PMMP | LAUREL DR | 003 | COR | 2018 | \$106,514.16 | \$122,774.11 | \$77,388.07 |
| PA NORTH | 16022952500 | 1639156 | RED ROCK EXTENSION | 559 | INST 715'-2" PMMP | RED ROCK RD | 083 | BRA | 2016 | \$15,606.47 | \$28,034.27 | \$0.00 |
| PA NORTH | 16022953200 | 1639336 | PM - D-1399 PHASE II REPLACEMENT | 557 | PM - D-1399 PHASE II REPLACE | 911 INDUSTRIAL ST | 073 | N-C | 2017 | \$2,250,000.00 | \$2,814,707.98 | \$37,612.91 |
| PA NORTH | 16022953701 | 1534535 | PORTERSVILLE ROAD AREA REPLACEMENT | 557 | 6425'-6",4",2" PMMP (DPI) | PORTERSVILLE RD | 073 | ELL | 2018 | \$781,084.94 | \$1,424,956.39 | \$298,866.15 |
| PA CENTRAL | 16022954600 | 1639465 | DOHRMAN CP6315 REPLACEMENT | 557 | INSTALL 6202'PHHP ABN CP6315 | 1157 DOHRMAN ST | 003 | MCK | 2017 | \$124,843.58 | \$259,113.65 | \$71,053.11 |
| PA NORTH | 16022954901 | 1639487 | D-22 VALLEY VIEW TO UNITY ROAD REPLACE | 557 | 10,600'-8" PHHP | VALLEY VIEW RD | 019 | HAR | 2017 | \$1,184,318.81 | \$1,595,978.79 | \$8,928.90 |
| PA CENTRAL | 16022956100 | 1639587 | BON AIR REPLACEMENT PROJECT | 557 | INSTALL 1,687 OF 2" PMP | BON AIR | 003 | PIT | 2017 | \$993,766.14 | \$360,129.60 | \$123,444.72 |
| PA NORTH | 16022956700 | 1639650 | 2231 - BEAVER - REPL JO | 557 | INSTALL NEW 4" VALVE | BEAVER RD | 007 | BAD | 2016 | \$10,883.14 | \$24,128.71 | \$2,416.00 |
| PA NORTH | 16022957300 | 1639681 | D-22 @ GRANGE ROAD REPLACEMENT | 557 | 440'-8" PH HP | GRANGE | 019 | SLI | 2018 | \$89,952.90 | \$97,088.99 | \$6,869.20 |

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| PA NORTH | 16022958800 | 1639725 | 1ST AVENUE REPLACEMENT | 557 | INSTALL 1320'-2.4,6" PMLP | 1ST AV | 007 | CON | 2017 | \$255,602.61 | \$302,204.93 | \$251,525.83 |
| PA NORTH | 16022959000 | 1639736 | PLEASANT DRIVE AREA REPLACEMENT | 557 | 2130'-4" PMMP 2675'-2" PMMP | PLEASANT DR | 123 | WAR | 2018 | \$285,392.28 | \$292,078.94 | \$48,451.40 |
| PA NORTH | 16022959200 | 1528936 | PM-D-1869 BIG BEAVER EAST REPLACEMENT | 559 | PM - KOPPEL OUTLET REPLACE | 250 NORWOOD DR | 007 | BVR | 2016 | \$0.00 | \$467.18 | |
| PA NORTH | 16022959900 | 1639761 | WALKER FLATS VALVE INSTALL | 559 | 2" POLYVALVE | WALKER FLAT RD | 005 | HAW | 2016 | \$8,860.16 | \$5,501.92 | |
| PA CENTRAL | 16022960100 | 1639764 | 1010 SAW MILL RUN RELOCATION | 561 | RELOCATE 100' - 8"HD PHP | 1010 SAW MILL RUN BV | 003 | PIT | 2016 | \$100,798.66 | \$67,847.69 | |
| PA NORTH | 16022961601 | 1639857 | 2239 - WATER - REPL JO | 557 | INSTALL 1800'-6", 4' & 2" PMMP | WATER ST | 123 | WAR | 2017 | \$313,317.51 | \$276,261.56 | \$204,712.74 |
| PA NORTH | 16022961900 | 1639865 | CATCH BASIN AT 4TH AND LAUREL | 561 | RELOCATE MAIN FOR CATCH BASIN | LAUREL ST | 123 | WAR | 2016 | \$16,875.66 | \$7,411.18 | |
| PA CENTRAL | 16022962101 | 1639885 | CLAIRTON WWTP RELOCATION PROJECT | 561 | 850'-8"PHHP-RELOCATE-DIG&BACKF | N STATE ST | 003 | CLA | 2017 | \$40,236.79 | \$69,537.67 | |
| PA NORTH | 16022962400 | 1639895 | PIZZA SHOP REGULATOR INLET | 557 | 250'-4" PM-MP | MAIN ST | 031 | KNO | 2017 | \$63,879.02 | \$39,298.71 | \$502.32 |
| PA CENTRAL | 16022962702 | 1635165 | MCCOY HP REPLACEMENT PROJECT | 557 | INST 4885' 6"/4" PMMP | MCCOY | 003 | MCK | 2019 | \$2,223,458.26 | \$2,611,495.82 | \$533,306.77 |
| PA NORTH | 16022962900 | 1639917 | 3RD AVENUE NEW BRIGHTON - MP | 557 | INSTALL 5,545'-4" PMMP | 3RD AV | 007 | N-B | 2019 | \$1,053,591.71 | \$1,054,248.78 | \$660,128.46 |
| PA NORTH | 16022963300 | 1639919 | MORADO DWELLINGS | 559 | INSTALL 160'-4" PMLP | MORADO DWELLINGS | 007 | BVR | 2017 | \$22,896.08 | \$35,184.79 | \$9,060.10 |
| PA CENTRAL | 16022964000 | 1639977 | 2221 - BELROSE - REPL JO | 557 | BELROSE INSULATOR - 5'6" PMMP | BELROSE | 003 | PIT | 2016 | \$9,792.22 | \$10,446.96 | \$3,066.72 |
| PA NORTH | 16022966300 | 1531421 | PM - RIMMERSBURG STATION REPLACEMENT | 559 | PM - RIMMERSBURG OUTLET PIPING | PUMP STATION RD | 031 | RIM | 2016 | \$0.00 | \$269,000.67 | \$127,848.92 |
| PA NORTH | 16022968000 | 1640184 | CLYMER PHASE 1 | 557 | INSTALL 160'-4" PMP | MORRIS | 063 | CLY | 2017 | \$1,252,977.87 | \$1,061,666.18 | \$735,451.65 |
| PA NORTH | 16022969500 | 1528936 | PM-D-1869 BIG BEAVER EAST REPLACEMENT | 559 | PM - SNEDECKER MP OUTLET | 199 ALLEY HILL RD | 007 | BVR | 2016 | \$0.00 | \$0.00 | |
| PA NORTH | 16022969701 | 1639850 | STEEL CITY SPORTS BAR & GRILLE | 559 | OC 2400'-6"PMMP/500'-2"PMMP | WILLOW HURST | 073 | N-C | 2018 | \$366,550.95 | \$476,108.16 | \$104,728.26 |
| PA CENTRAL | 16022969900 | 1640343 | SALISBURY REPLACEMENT PROJECT PHASE 2 | 557 | INST 1700' - 2' & 4" PMP | SALISBURY | 003 | PIT | 2017 | \$580,958.64 | \$579,464.65 | \$529,871.84 |
| PA CENTRAL | 16022970100 | 1640356 | BOYER AVE REPLACEMENT PROJECT | 557 | INSTALL 350'-4" PMP | BOYER | 003 | BET | 2017 | \$47,429.07 | \$104,263.82 | \$24,940.91 |
| PA NORTH | 16022970500 | 1638698 | FOREST EDGE-PHASE I | 559 | INSTALL 100'-2" PMMP | WOODLAWN RD | 019 | CRA | 2016 | \$10,679.96 | \$19,832.52 | \$6,059.63 |
| PA CENTRAL | 16022971500 | 1638638 | BAPTIST RD HP REPLACEMENT PROJECT | 557 | INSTALL 2,725'-8" PHHP | RT 88 | 003 | BET | 2019 | \$716,855.83 | \$1,328,188.28 | \$297,634.93 |
| PA NORTH | 16022971901 | 1640524 | D-81 / CAMP TREES MP REPLACEMENT | 567 | INST 2200'-2.4,6" PMMP/60# | D-81 | 003 | WEX | 2018 | \$390,277.39 | \$542,060.91 | \$0.00 |
| PA NORTH | 16022972101 | 1640524 | D-81 / CAMP TREES MP REPLACEMENT | 557 | INSTALL 760'-4&6"PMMP/PH1/25# | CAMP TREES MP | 003 | WEX | 2018 | \$147,615.48 | \$257,598.64 | |
| PA NORTH | 16022973400 | 1640558 | BEAVER ROAD REPLACEMENT | 557 | INSTALL 1,680' OF 4' & 6" PMLP | BEAVER RD | 007 | BAD | 2017 | \$234,887.62 | \$294,634.20 | \$137,480.25 |
| PA NORTH | 16022975601 | 1640653 | S.R. 588 | 561 | RELOCATE 500'-8" PMMP | S.R. 588 | 007 | BVR | 2017 | \$337,229.46 | \$406,295.35 | \$221,418.73 |
| PA CENTRAL | 16022975902 | 1640660 | WILLOW AVE REPLACEMENT PROJECT | 557 | INSTALL 2150'-8",6" PLP | WILLOW | 003 | PIT | 2018 | \$790,601.29 | \$1,146,621.79 | \$251,041.11 |
| PA NORTH | 16022976600 | 1640689 | 2231 - 15TH - REPL JO | 557 | PLASTIC INSERT 79'-1.25 PMLP | 15TH ST | 007 | CON | 2016 | \$6,644.60 | \$5,767.89 | \$4,888.58 |
| PA NORTH | 16022977600 | 1640712 | MARTIN STREET REPLACEMENT PROJECT | 557 | INSTALL 2149 - 2' PMLP (AC) | MARTIN ST | 073 | N-C | 2018 | \$283,448.90 | \$303,187.39 | \$174,111.44 |
| PA NORTH | 16022978201 | 1640732 | INTERSTATE PARKWAY REPLACEMENT | 557 | INST:6,970'-2",4" PMMP,PMIP | INTERSTATE PY | 083 | BRA | 2017 | \$464,749.73 | \$509,942.99 | \$40,534.28 |
| PA NORTH | 16022978400 | 1638355 | PM - D-135 PIPE EXPOSURE | 557 | PM - D-135 MONTOUR RUN REPLACE | MONTOUR RUN | 003 | COR | 2017 | \$858,130.00 | \$2,752,667.65 | |
| PA CENTRAL | 16022978800 | 1640754 | 2221 - BARTH - REPL JO | 557 | INSTALL 673' 2" PMP | BARTH | 003 | PIT | 2018 | \$131,519.84 | \$118,710.31 | \$47,990.68 |
| PA NORTH | 16022979400 | 1104321 | PM - D-1399 REPLACEMENT | 559 | PM - D-1399 10" OUTLET | 494 HOBART ST | 073 | N-C | 2016 | \$0.00 | \$464.06 | |
| PA NORTH | 16022979900 | 1640799 | CEDAR ST - MAHONINGTOWN | 557 | LAY 400'-4" PMLP (DPI) | N CEDAR ST | 073 | N-C | 2018 | \$49,880.38 | \$62,306.60 | \$19,848.07 |
| PA NORTH | 16022980200 | 1640804 | OHIO RIVER BLVD BORE | 557 | D-BORE -900' - 8" CSHP (DPI) | OHIO RIVER BV | 007 | ROC | 2018 | \$664,063.61 | \$1,089,888.86 | \$46,097.65 |
| PA CENTRAL | 16022981601 | 1641573 | D-56 CLAIRTON REPLACEMENT PROJECT | 557 | INST 3630'-6" PHHP | D-56 | 003 | CLA | 2018 | \$893,297.67 | \$1,160,778.78 | \$458,739.20 |
| PA NORTH | 16022982401 | 1642048 | OLDFIELD PLACE | 559 | INSTALL 1170'-8" OLDFIELD BTR | MERCER RD | 007 | N-B | 2017 | \$203,462.69 | \$287,566.82 | \$160,218.10 |
| PA NORTH | 16022982601 | 1640953 | WASHINGTON ST AREA REPLACEMENT | 557 | 2100'-2",2035'-4" P-MP | WASHINGTON ST | 083 | BRA | 2017 | \$684,396.77 | \$688,291.13 | |
| PA NORTH | 16022982800 | 1640969 | PATTERSON LANE REPLACEMENT | 557 | INSTALL 5,690' 2" PMMP | PATTERSON LN | 083 | BRA | 2018 | \$330,981.91 | \$464,495.52 | \$0.00 |
| PA NORTH | 16022983000 | 1640977 | D-4005 REPLACEMENT | 557 | INSTALL 8,205'-6" PMMP | SR948 | 123 | SHE | 2018 | \$536,676.46 | \$663,873.14 | \$54,783.48 |
| PA NORTH | 16022983200 | 1640981 | 2231 - D-75 - REPL JO | 557 | INSTALL 40'-10" CSHP | D-75 | 007 | BAD | 2017 | \$171,167.02 | \$169,674.25 | \$4,523.52 |
| PA NORTH | 16022983400 | 1640982 | JEFFERSON STREET AREA IMPROVEMENT | 557 | INSTALL -800'-2"PMMP | JEFFERSON | 083 | BRA | 2017 | \$97,856.70 | \$86,375.45 | \$48,455.87 |
| PA NORTH | 16022983600 | 1640986 | 102 GREENWOODS DR | 559 | INSTALL 20' - 2" PMMP | 102 GREENWOODS | 003 | SEW | 2017 | \$7,560.53 | \$3,646.34 | \$1,138.56 |
| PA NORTH | 16022983801 | 1640993 | D-4002 PHASE 2 | 557 | INSTALL -4,760'-8"PMMP | D4002 | 083 | BRA | 2018 | \$705,403.40 | \$657,443.94 | \$230,441.12 |
| PA NORTH | 16022984000 | 1640995 | D-75: ABANDON WITH 10" SS | 557 | INSTALL 10" SS | D-75 | 007 | FRE | 2016 | \$28,322.18 | \$52,483.27 | \$0.00 |
| PA NORTH | 16022984300 | 1640998 | FIFTH AVE REPLACEMENT-WARREN | 557 | 680'-4"PMMP, 3,160'-2"PMMP | FIFTH | 123 | WAR | 2018 | \$508,421.33 | \$411,017.56 | \$249,460.12 |
| PA NORTH | 16022985001 | 1641020 | GLEN MITCHELL BETTERMENT | 559 | INSTALL 540'-6",3560'-4" PMMP | BEAVER ST | 003 | SEW | 2018 | \$2,131,731.55 | \$1,601,779.92 | \$374,431.55 |
| PA CENTRAL | 16022986001 | 1641073 | FERNLEAF MP REPLACEMENT PROJECT | 557 | INST 500'-2' & 1,780'-8" PMMP | FERNLEAF | 003 | PIT | 2019 | \$933,913.19 | \$1,223,389.89 | \$355,915.71 |
| PA CENTRAL | 16022986200 | 1641079 | GREENTREE RD INSULATOR PROJECT | 559 | INSTALL 16" INSULATOR | GREENTREE RD | 003 | PIT | 2017 | \$297,731.63 | \$429,166.15 | \$20,510.08 |
| PA CENTRAL | 16022987300 | 1636240 | PM - D-1581 WASHINGTON JUNCTION | 557 | PM-WASH JNCTN-MILFORD REPLACE | MILFORD DR | 003 | BET | 2017 | \$10,045,040.00 | \$9,433,923.48 | \$1,636,402.38 |
| PA NORTH | 16022987501 | 1533533 | PM - D-82 GSP BETTERMENT | 559 | PM - D-82 PHASE I REPLACEMENT | BRADFORD RD | 003 | BRA | 2017 | \$7,720,000.00 | \$9,690,870.24 | \$1,519,193.93 |
| PA NORTH | 16022989201 | 1641214 | RAILROAD STREET REPLACEMENT | 557 | INSTALL -350'-8" HDPE | 491 RAILROAD ST | 007 | ROC | 2017 | \$990,056.76 | \$1,103,943.75 | \$373,103.22 |
| PA NORTH | 16022989500 | 1641220 | OVERLOOK LN | 559 | INSTALL 400'-2" PMMP | OVERLOOK LN | 003 | SEW | 2017 | \$42,624.15 | \$34,333.08 | \$3,311.76 |
| PA CENTRAL | 16022989900 | 1635165 | MCCOY HP REPLACEMENT PROJECT | 559 | INST 30'-4" PHHP INLET LEG | MCCOY REGULATOR INLET | 003 | MCK | 2019 | \$39,505.40 | \$67,797.92 | \$1,314.60 |
| PA CENTRAL | 16022992400 | 1208503 | PM-D1581 PH.5-A-BETHEL CHURCH RD | 557 | PM - D-1581 MCMURRY RD REPLACE | BETHEL CHURCH RD | 003 | BET | 2017 | \$10,285,519.00 | \$9,504,687.08 | \$1,987,231.75 |
| PA CENTRAL | 16022993800 | 1638638 | BAPTIST RD HP REPLACEMENT PROJECT | 559 | INSTALL 1,990'-6" PMP | MARTIST RD | 003 | BET | 2017 | \$105,582.63 | \$64,973.15 | \$0.00 |
| PA NORTH | 16022994600 | 1641381 | 107 TIGER LILLY DR | 561 | RELOCATE 10'-2" PMIP | 107 TIGER LILLY DR | 007 | ALI | 2016 | \$3,499.29 | \$3,974.94 | |
| PA NORTH | 16022995200 | | | 559 | LAY 150'-2" PMLP | DUSS AV | 007 | AMB | 2016 | \$10,283.29 | \$13,524.65 | \$5,342.15 |
| PA NORTH | 16022995500 | 1641419 | NICKLEVILLE RD REPLACEMENT PHASE 2 | 557 | 2000'-2" PMMP | NICKLEVILLE RD | 121 | EML | 2018 | \$115,340.01 | \$107,418.69 | |

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|------------|-------------|---------|--|-----|------------------------------------|------------------------|-----|------|------|----------------|----------------|----------------|
| PA NORTH | 16022995700 | 1638982 | BEST WESTERN PLUS HOTEL | 561 | LAY 526'-2" PMP BEST WESTERN | MARS RD | 019 | CRA | 2018 | \$7,869.01 | \$8,290.04 | |
| PA NORTH | 16022996900 | 1641518 | WATT STREET | 557 | INSTALL 15' - 2" PMMP | WATT | 003 | COR | 2017 | \$9,914.51 | \$5,122.13 | \$1,469.70 |
| PA CENTRAL | 16023459600 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 557 | LAY 7370'-2"PMMP, 3710'-4"PMMP | OAKWOOD | 125 | MCM | 2016 | \$1,018,795.48 | \$1,366,533.09 | \$190,988.42 |
| PA CENTRAL | 16023459800 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 557 | LAY 2070'-4",2" PMMP | LAKEWOOD | 125 | MCM | 2016 | \$204,511.51 | \$157,394.02 | \$22,675.14 |
| PA CENTRAL | 16023460000 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 557 | LAY 400'-2"PIP | WALNUT | 125 | CAN | 2016 | \$58,390.42 | \$252,604.44 | |
| PA CENTRAL | 16023460500 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 559 | LAY 90'-2"PIP | HAHN | 125 | MCM | 2016 | \$12,286.76 | \$21,698.04 | \$128.64 |
| PA CENTRAL | 16023460900 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 557 | LAY 500'-4"PIP | EVERGREEN | 125 | MCM | 2016 | \$48,298.05 | \$40,571.57 | \$0.00 |
| PA CENTRAL | 16023461300 | 1533991 | HENDERSON ROAD BETTERMENT | 559 | INSTALL 1,240'-4" PMMP | HENDERSON RD | 125 | HIC | 2016 | \$124,950.19 | \$114,636.45 | \$14,014.31 |
| PA SOUTH | 16023461900 | 1635107 | LOWRY AV | 559 | INSTALL 371'-2" PMLP LOWRY AVE | LOWRY AV | 129 | JEA | 2016 | \$53,154.88 | \$89,100.77 | \$22,316.08 |
| PA CENTRAL | 16023463801 | 1635272 | BROWNS CREEK REPLACEMENT PROJECT | 557 | INST 1900' - 4" PLP | BROWNS CREEK RD | 059 | GRA | 2016 | \$348,358.01 | \$414,719.42 | \$1,017.06 |
| PA CENTRAL | 16023464000 | 1635274 | SUNOCO REPLACEMENT PROJECT | 557 | LAY 326'-4"PMMP | WASHINGTON | 125 | WAS | 2016 | \$34,426.83 | \$24,995.20 | |
| PA SOUTH | 16023464300 | 1635291 | 2321 - WASHINGTON - REPL JO | 557 | INSTALL 297'-2" PLP | WASHINGTON | 129 | JEA | 2016 | \$33,975.44 | \$38,064.89 | \$10,381.60 |
| PA CENTRAL | 16023464500 | 1531882 | RIDGE AVE RELOCATION PROJECT | 561 | INSTALL 753'-4" PMMP | RIDGE AVE | 125 | CAN | 2016 | \$56,036.54 | \$66,684.91 | \$2,733.60 |
| PA CENTRAL | 16023464700 | 1635356 | IDAHO STREET REPLACEMENT PROJECT | 557 | LAY 677'-2"PLP-VERBAL | IDAHO | 125 | WAS | 2016 | \$43,880.67 | \$32,948.48 | \$5,398.76 |
| PA SOUTH | 16023465500 | 1635397 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 375'-4" PMLP | JEFFERSON AV | 129 | JEA | 2016 | \$71,593.33 | \$57,767.57 | \$21,299.24 |
| PA SOUTH | 16023465801 | 1635410 | 2321 - WOODWARD - REPL JO | 557 | INSTALL 1604'-4" PMLP | WOODWARD AV | 051 | BRO | 2016 | \$112,501.41 | \$160,971.60 | \$481.44 |
| PA CENTRAL | 16023466100 | 1635431 | WILMONT AVENUE REPLACEMENT PROJECT | 557 | LAY 1045'-2"PMMP, 5'-4"PMMP | WILMONT | 125 | WAS | 2018 | \$93,975.43 | \$89,011.39 | \$7,114.80 |
| PA CENTRAL | 16023466400 | 1531675 | OAK GROVE RD(D504) REPLACEMENT PROJECT | 559 | INSTALL 1,295'-8'/700'-2" PMMP | N MAIN ST | 125 | WAS | 2017 | \$245,295.43 | \$305,958.14 | \$3,310.12 |
| PA SOUTH | 16023466701 | 1635474 | E MUD PIKE | 561 | INSTALL 714'-2" PHHP | E MUD PIKE | 111 | BER | 2017 | \$51,621.75 | \$72,689.20 | |
| PA CENTRAL | 16023467200 | 1635519 | CANTERBURY ROAD REPLACEMENT PROJECT | 557 | INSTALL 4064'-2", 1370'-4"PMMP | CANTERBURY | 125 | CAN | 2017 | \$602,049.59 | \$498,979.50 | \$33,710.15 |
| PA SOUTH | 16023467401 | 1635569 | MAPLE CREEK BORE | 561 | RELOCATE 565'-8" & 2" PMMP | MCKEAN AV | 125 | CHA | 2018 | \$264,210.17 | \$222,145.45 | \$7,139.04 |
| PA SOUTH | 16023467600 | 1635571 | LOWBER RD | 561 | INSTALL 470'-4" PMMP 400' BORE | LOWBER RD | 129 | HER | 2017 | \$92,152.66 | \$83,443.82 | \$1,197.00 |
| PA CENTRAL | 16023468800 | 1635623 | LATIMER REPLACEMENT PROJECT | 557 | LATIMER REPLACEMENT PROJECT | LATIMER | 125 | STR | 2016 | \$46,341.16 | \$33,993.70 | \$17,060.11 |
| PA CENTRAL | 16023469101 | 1635671 | NOBLESTOWN RD RELOCATION | 561 | LAY 430'-6"P | 1312 NOBLESTOWN RD | 003 | OAK | 2017 | \$52,982.42 | \$68,983.33 | \$0.00 |
| PA SOUTH | 16023469902 | 1635772 | SOLOMON HOLIDAY MOBILE HOME PARK | 559 | INSTALL 3,995'-2" PMMP | SOLOMON HOLIDAY MOBILE | 051 | UNI | 2017 | \$340,446.65 | \$378,269.65 | \$65,748.24 |
| PA SOUTH | 16023470200 | 1317121 | 2321 - D-1254 - REPL JO | 557 | INSTALL 1,700'-8" PHHP & CSHP | D-1254 | 111 | MEY | 2016 | \$368,939.21 | \$482,332.07 | \$14,445.42 |
| PA CENTRAL | 16023471601 | 1635894 | BUFFALO LAND COMPANY | 557 | INSTALL 830'-8" PMMP | PARK AVE | 125 | WAS | 2016 | \$131,859.67 | \$156,358.08 | \$2,820.71 |
| PA CENTRAL | 16023471800 | 1635937 | CRESTVIEW REPLACEMENT PROJECT | 557 | INSTALL 4,300' PMP | CRESTVIEW | 125 | MCM | 2016 | \$373,916.50 | \$354,745.04 | \$2,098.44 |
| PA CENTRAL | 16023472300 | 1635984 | COVE ROAD REPLACEMENT | 557 | DB 850'-2" PMMP | COVE | 125 | WAS | 2017 | \$120,495.52 | \$74,696.95 | \$160.29 |
| PA SOUTH | 16023472601 | 1636005 | 2321 - D-7090 - REPL JO | 557 | INSTALL 5120'-8" P. CS MP | D- 7090 | 061 | ADA | 2016 | \$1,066,760.12 | \$1,130,433.23 | |
| PA CENTRAL | 16023473000 | 1636023 | BROWNS CREEK REPLACEMENT PROJECT | 557 | INSTALL 891' OF 2" PMP | BROWNS CREEK | 059 | NIN | 2019 | \$353,002.04 | \$182,617.20 | \$2,297.40 |
| PA CENTRAL | 16023473600 | 1636049 | MILLERS RUN RD REPLACEMENT PROJECT | 557 | 6550'-8"P,540'-4"P,2395'-2"PMMP | MILLERS RUN | 003 | CEC | 2017 | \$1,251,706.36 | \$1,684,029.51 | \$496,859.18 |
| PA SOUTH | 16023474700 | 1636086 | SR119 STA (1152+25) | 561 | RELOCATE 520'-4" CSMP | 119 SR | 129 | MT | 2016 | \$56,030.59 | \$36,447.86 | \$3,179.82 |
| PA SOUTH | 16023474900 | 1636098 | 2321 - FOUNDRY - REPL JO | 557 | INSTALL 3125'-2" & 6" | FOUNDRY AV | 051 | NEW | 2017 | \$304,638.12 | \$374,946.43 | \$102,504.42 |
| PA SOUTH | 16023475400 | 1636109 | 2321 - FIFTH - REPL JO | 557 | INSTALL 872'-2" PMMP | FIFTH AV | 111 | MEY | 2016 | \$25,778.51 | \$47,519.27 | \$12,692.70 |
| PA SOUTH | 16023475700 | 1636124 | 2321 - SECOND - REPL JO | 557 | INSTALL 415'-2" PMMP | SECOND AV | 111 | MEY | 2016 | \$18,892.22 | \$20,151.88 | \$1,523.78 |
| PA CENTRAL | 16023476200 | 1636135 | CHESTNUT ST REPLACEMENT PROJECT | 557 | LAY 5880' PMP, UPRAE 355' | CHESTNUT | 125 | WAS | 2019 | \$1,012,950.64 | \$1,359,825.47 | \$729,595.19 |
| PA SOUTH | 16023476501 | 1636141 | 2321 - KNOX - REPL JO | 557 | INSTALL 5590'-2", 8" PMMP | KNOX RD | 051 | REP | 2017 | \$573,499.79 | \$585,507.27 | \$7,620.45 |
| PA SOUTH | 16023477301 | 1636188 | WATER ST. PROJECT | 557 | INSTALL 15,940' - 6" & 2" PMMP | WATER ST | 061 | BRO | 2017 | \$1,883,027.26 | \$1,963,970.60 | \$1,100,264.42 |
| PA CENTRAL | 16023477500 | 1636190 | N WADE REPLACEMENT PROJECT | 557 | INSTALL 6545'-2", 4" PMP | N WADE | 125 | WAS | 2019 | \$939,470.96 | \$1,506,154.04 | \$760,009.14 |
| PA CENTRAL | 16023477700 | 1636191 | COLLEGE ST REPLACEMENT PROJECT | 557 | 70'-8",1015'-6",4385'-4",2556'-2"P | COLLEGE ST | 125 | CAN | 2019 | \$2,112,278.19 | \$2,527,529.30 | \$1,421,216.72 |
| PA CENTRAL | 16023478000 | 1636201 | DONNAN AVENUE REPLACEMENT PROJECT | 557 | INSTALL 2086'-4"PLP | DONNAN | 125 | STR | 2016 | \$249,402.90 | \$308,327.16 | \$144,045.85 |
| PA CENTRAL | 16023478300 | 1636234 | ANGLE ST REPLACEMENT PROJECT | 557 | LAY 240'-2"PLP | ANGLE | 125 | WAS | 2017 | \$33,843.25 | \$65,754.06 | \$39,322.83 |
| PA SOUTH | 16023479200 | 1636265 | HIGHLAND AVE - PENN / HEMPFIELD | 557 | INSTALL 3260'-2/4" PMMP | HIGHLAND AV | 129 | PEN | 2019 | \$560,462.93 | \$375,962.75 | \$108,896.34 |
| PA SOUTH | 16023479601 | 1636270 | 2321 - MAIN - REPL JO | 557 | INSTALL 3,658' - 2" & 4" PMMP | MAIN | 111 | BER | 2019 | \$995,407.22 | \$1,060,573.63 | \$245,816.51 |
| PA SOUTH | 16023479801 | 1636280 | BERLIN PLANK RD | 559 | INSTALL 2,791'-2" & 8" PHHP | BERLIN PLANK RD | 111 | SOM | 2016 | \$444,468.37 | \$543,777.26 | \$28,389.25 |
| PA SOUTH | 16023481001 | 1636311 | 2321 - HOPWOOD COOLSPRING - REPL JO | 557 | INSTALL 5625'-2",4"86" PMMP | HOPWOOD COOLSPRING RD | 051 | INST | 2018 | \$1,216,979.96 | \$1,414,337.50 | \$663,540.42 |
| PA SOUTH | 16023481402 | 1636315 | 2321 - ISABELLA - REPL JO | 557 | INSTALL 10533'-2",4",6" PMMP | ISABELLA RD | 051 | CON | 2017 | \$1,687,584.63 | \$1,813,810.38 | \$582,339.49 |
| PA SOUTH | 16023482001 | 1636358 | 2321 - GLENN - REPL JO | 557 | INSTALL 6,665'-6", 4" & 2" PMMP | GLENN AV | 051 | BRO | 2017 | \$645,325.48 | \$634,337.64 | \$248,558.91 |
| PA CENTRAL | 16023482202 | 1636362 | D504 VALVE ABN & MAIN INSTALL | 557 | ABN VALVES & REPLACE 1500' WI | D-504 | 125 | CAN | 2017 | \$416,663.55 | \$520,211.07 | \$4,131.18 |
| PA SOUTH | 16023483100 | 1531162 | D-7040 BOBTOWN | 557 | INSTALL 825'-4"PM-MP, 20'-2"PM | D- 7040 | 059 | BOB | 2017 | \$162,208.42 | \$152,494.29 | \$336.00 |
| PA SOUTH | 16023483301 | 1636459 | 2321 - WESTERN - REPL JO | 557 | INSTALL 405'-8"PLP | WESTERN AV | 129 | JEA | 2016 | \$84,211.06 | \$93,311.29 | \$16,250.64 |
| PA SOUTH | 16023484001 | 1636485 | 2321 - DERRICK - REPL JO | 557 | INSTALL 5773'-2", 4", 6"PMMP | DERRICK AV | 051 | UNI | 2016 | \$895,026.65 | \$892,000.66 | \$98.64 |
| PA CENTRAL | 16023485501 | 1636619 | ALLISON HOLLOW VALVE REPLACEMENT | 557 | INSTALL -1060' PMP | ALLISON HOLLOW RD | 125 | HOU | 2017 | \$87,897.31 | \$133,621.82 | \$6,232.06 |
| PA CENTRAL | 16023488000 | 1636944 | RIDGE AVE 2ND PHASE | 559 | EXTEND MAINLINE ON RIDGE AVE | RIDGE AVE | 125 | CAN | 2016 | \$62,714.10 | \$57,436.68 | \$21,300.28 |
| PA CENTRAL | 16023489201 | 1636915 | SR 519 RELOCATION PROJECT | 561 | DB 150'-2"CSHP/120'-4"C | SR 519 | 125 | STR | 2016 | \$174,288.35 | \$244,938.35 | \$7,499.05 |
| PA CENTRAL | 16023489600 | 1634937 | W MCMURRAY ROAD REPLACEMENT PROJECT | 559 | DB 320'-6"PMIP,OC 50'-6"PMIP | W MCMURRAY RD | 125 | MCM | 2016 | \$105,708.32 | \$113,011.70 | |
| PA CENTRAL | 16023490000 | 1636985 | 2391 - PIKE - REPL JO | 557 | INSTALL 144'-2" P LP | CUMMINS | 125 | WAS | 2016 | \$23,293.02 | \$29,653.33 | \$3,971.77 |

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| PA SOUTH | 16023490401 | 1636485 | 2321 - DERRICK - REPL JO | 557 | INSTALL 1469'-4" PMMP | BAILEY | 051 | UNI | 2017 | \$287,315.05 | \$261,975.68 | \$3,930.48 |
| PA SOUTH | 16023490900 | 1637030 | NORTH HIGH STREET | 559 | INSTALL 175'-4" & 225'-2" PMMP | N HIGH ST | 051 | UNI | 2016 | \$27,222.72 | \$23,058.08 | |
| PA CENTRAL | 16023491900 | 1637095 | WINDSOR DRIVE REPLACEMENT PROJECT | 557 | LAY 4830'-2" PMMP | WINDSOR RD | 125 | WAS | 2017 | \$459,597.01 | \$566,076.93 | \$478,331.68 |
| PA CENTRAL | 16023492200 | 1531675 | OAK GROVE RD(D504) REPLACEMENT PROJECT | 557 | INSTALL 2,100'-6" PMMP | HENDERSON AV | 125 | WAS | 2016 | \$294,759.85 | \$345,869.43 | \$68,935.48 |
| PA SOUTH | 16023492601 | 1635321 | 146 CHOPP ST | 559 | INSTALL 88'-2" PMMP | 146 CHOPP ST | 129 | SUT | 2016 | \$10,905.74 | \$11,374.27 | \$0.00 |
| PA SOUTH | 16023493000 | 1637119 | 2321 - RIVER RD - REPL JO | 557 | INSTALL 295'-2" PM-LP | RIVER RD | 051 | DAW | 2016 | \$15,321.19 | \$7,412.24 | |
| PA CENTRAL | 16023494600 | 1635378 | WASHINGTON CITY MISSION | 557 | INSTALL 20'-4" PLP | STRAWBERRY | 125 | WAS | 2016 | \$5,362.55 | \$5,243.55 | |
| PA CENTRAL | 16023496000 | 1636405 | PM - D-1581 BAKER RD REPLACEMENT | 557 | PM - D-1581 BAKER RD REPLACE | 346 FAWCETT CHURCH RD | 125 | CEC | 2016 | \$4,200,000.00 | \$4,662,569.20 | \$361,668.49 |
| PA CENTRAL | 16023496600 | 1212302 | CPG LINE 36 ABANDONMENT PROJECT | 559 | CUT AND CAP MAINLINE | LINNWOOD RD | 125 | EIG | 2016 | \$1,914.91 | \$2,247.59 | |
| PA SOUTH | 16023497100 | 1532834 | 2ND ST | 559 | INSTALL 440'-2" PMLP | THIRD ST | 129 | W N | 2016 | \$33,390.34 | \$15,781.74 | \$353.98 |
| PA CENTRAL | 16023497500 | 1637520 | PINKERTON RUN REPLACEMENT PROJECT | 557 | INSTALL 1,610'-6" PMMP | NOBLESTOWN | 003 | OAK | 2018 | \$436,919.29 | \$371,643.33 | \$55,487.54 |
| PA SOUTH | 16023498000 | 1637534 | 2321 - HOPWOOD FAIRCHANCE RD - REPL JOB | 557 | INSTALL 7'-3" PM-MP | HOPWOOD FAIRCHANCE RD | 051 | HOP | 2016 | \$15,763.09 | \$17,536.44 | \$3,195.97 |
| PA CENTRAL | 16023499501 | 1637672 | WAFFLE HOUSE RELOCATION | 561 | INSTALL 25'-6" PMMP | WASHINGTON RD | 125 | WAS | 2016 | \$4,567.85 | \$4,459.19 | |
| PA CENTRAL | 16023499700 | 1637761 | 2391 - DONNAN - REPL JO | 557 | REPLACE 30' MAINLINE | DONNAN | 125 | WAS | 2016 | \$8,767.83 | \$2,092.60 | \$0.00 |
| PA SOUTH | 16023499900 | 1637768 | 2321 - EMERSON AV - REPL JO | 557 | INSTALL 200'-4" PM-LP | EMERSON AV | 129 | MT | 2018 | \$21,802.38 | \$35,268.89 | \$0.00 |
| PA CENTRAL | 16023503800 | 1638535 | UNION AVE VALVE ABN | 557 | ABN VALVE AND REPLACE PIPE | UNION AV | 003 | OAK | 2016 | \$15,843.67 | \$23,885.69 | |
| PA CENTRAL | 16023504200 | 1638458 | OLD NATIONAL PIKE BETTERMENT PROJECT | 559 | INSTALL 500'-2" PMLP | OLD NATIONAL PK | 125 | W-A | 2016 | \$50,171.03 | \$27,175.19 | |
| PA CENTRAL | 16023505300 | 1528178 | 304 BUCKELS AVE | 559 | INSTALL 100'-2" PMMP | BUCKELS AVE | 125 | HOU | 2016 | \$12,060.42 | \$12,506.34 | \$2,699.24 |
| PA SOUTH | 16023505701 | 1638631 | 193 FRONT ST | 561 | INSTALL 60'-4" PMLP | 193 FRONT ST | 125 | MIL | 2016 | \$37,665.31 | \$40,470.82 | |
| PA SOUTH | 16023506401 | 1638665 | 2321 - W TENTH - REPL JO | 557 | INST 1073'-4" PMMP | W TENTH ST | 125 | DON | 2016 | \$56,342.50 | \$142,471.80 | \$0.00 |
| PA CENTRAL | 16023506900 | 1638728 | RIDGEWOOD DR | 557 | DB 500'-2" PMMP | RIDGEWOOD DR | 125 | WAS | 2017 | \$80,264.29 | \$80,925.96 | \$1,572.55 |
| PA CENTRAL | 16023507601 | 1638759 | SANITARIUM ROAD REPLACEMENT PROJECT | 557 | INSTALL 310'-4" PMMP | SANITARIUM DR | 125 | WAS | 2016 | \$27,940.91 | \$43,159.00 | \$8,658.78 |
| PA CENTRAL | 16023508900 | 1638836 | OLD NATIONAL PIKE REPLACEMENT PROJECT | 557 | INSTALL 1,230'-2" PMLP | OLD NATIONAL | 125 | W-A | 2017 | \$98,675.21 | \$74,877.07 | |
| PA CENTRAL | 16023511700 | 1639177 | FAYETTE STREET BETTERMENT PROJECT | 559 | INSTALL 540' 2" PMP | FAYETTE ST | 125 | BJR | 2016 | \$42,217.19 | \$43,954.36 | \$908.25 |
| PA CENTRAL | 16023512400 | 1639209 | E COLLEGE STREET REPLACEMENT | 557 | LAY 3'-3" PMMP | COLLEGE ST | 125 | CAN | 2016 | \$2,729.25 | \$13,482.67 | \$9,720.15 |
| PA CENTRAL | 16023513000 | 1639251 | COLEMAN ROAD REPLACEMENT PROJECT | 557 | LAY 7'-2", 3'-1.25" -- VERBAL | COLEMAN | 125 | MCD | 2016 | \$1,986.26 | \$15.99 | |
| PA CENTRAL | 16023513400 | 1639270 | COLEMAN ROAD REPLACEMENT PROJECT | 557 | DB 830'-2" PMMP, OC 35'-6" PMMP | COLEMAN | 125 | MCD | 2017 | \$91,686.02 | \$147,394.02 | \$0.00 |
| PA CENTRAL | 16023514501 | 1639330 | D483 ABN & MAIN INSTALL | 557 | 2210'-4" PLASTIC | D483 | 125 | CAN | 2017 | \$186,083.55 | \$186,870.80 | \$0.00 |
| PA SOUTH | 16023515002 | 1635100 | 2321 - PENNSYLVANIA - REPL JO | 557 | INSTALL 3,282'-2", 4", 6", 8" PLP | PENNSYLVANIA AV | 129 | IRW | 2017 | \$839,915.28 | \$956,070.12 | \$557,773.63 |
| PA SOUTH | 16023515301 | 1635100 | 2321 - PENNSYLVANIA - REPL JO | 557 | INSTALL 1020'-8" PHHP | PENNSYLVANIA AV | 129 | IRW | 2017 | \$353,302.58 | \$359,904.80 | \$17,675.46 |
| PA CENTRAL | 16023515900 | 1639450 | ARNOLD AVENUE REPLACEMENT PROJECT | 557 | LAY 430'-2" PMMP | ARNOLD AV | 125 | STR | 2016 | \$58,417.95 | \$60,118.18 | \$37,990.97 |
| PA CENTRAL | 16023516101 | 1528480 | Pinnacle Pointe | 559 | INSTALL 320'-2" PMMP | PINNACLE DR | 003 | CUD | 2016 | \$20,837.58 | \$13,757.71 | |
| PA CENTRAL | 16023516300 | 1639561 | OAK ROAD REPLACEMENT PROJECT | 557 | DB 975'-2" PMMP | OAK RD | 059 | WAY | 2017 | \$11,597.08 | \$128,102.51 | \$196.27 |
| PA CENTRAL | 16023516600 | 1639609 | SUMMERLEA REPLACEMENT PROJECT | 557 | 1945'-2", 2210'-4" PMMP | SUMMERLEA | 125 | WAS | 2017 | \$833,188.23 | \$1,224,736.64 | \$730,193.10 |
| PA SOUTH | 16023516800 | 1639636 | 2321 - PENNSYLVANIA - REPL JO | 557 | INST 1,473'-2", 4" PMLP | PENNSYLVANIA AV | 125 | CAL | 2017 | \$264,853.12 | \$314,951.13 | \$56,416.23 |
| PA SOUTH | 16023517001 | 1639636 | 2321 - PENNSYLVANIA - REPL JO | 557 | INSTALL 13,621'-2", 4" PMMP | PENNSYLVANIA AV | 125 | CAL | 2017 | \$1,326,200.28 | \$1,297,616.92 | \$159,813.06 |
| PA CENTRAL | 16023517600 | 1639742 | BANETOWN REPLACEMENT PROJECT | 557 | LAY 10'-2" PMMP | BANETOWN | 125 | WAS | 2016 | \$4,478.71 | \$5,872.21 | |
| PA CENTRAL | 16023517900 | 1639766 | MCGOVERN REPLACEMENT PROJECT | 557 | LAY 147'-4" PLP-- VERBAL | MCGOVERN | 125 | HOU | 2016 | \$17,249.54 | \$12,097.39 | \$10,697.62 |
| PA CENTRAL | 16023518700 | 1640057 | STREET AT THE MEADOWS RELOCATION | 561 | RELOCATE/LOWER 135'-4" PMMP | RACETRACK RD | 125 | WAS | 2016 | \$6,910.29 | \$6,650.74 | |
| PA SOUTH | 16023519002 | 1533638 | 2321 - MEMORIAL - REPL JO | 557 | INST 1848'-4" PMMP | MEMORIAL DR | 051 | PER | 2017 | \$199,958.01 | \$218,787.88 | \$17,360.76 |
| PA SOUTH | 16023519400 | 1316356 | 2321 - D-7007 - REPL JO | 557 | INSTALL 11,135'-4", 6", 8" PHHP | D-7007 | 129 | N H | 2017 | \$1,544,178.45 | \$1,781,469.62 | |
| PA SOUTH | 16023519801 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 180'-4" PMMP | MOREWOOD ST | 129 | MT | 2017 | \$105,458.10 | \$105,698.25 | \$9,124.20 |
| PA SOUTH | 16023520501 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 423'-8", 4" PMLP | EAGLE ST | 129 | MT | 2017 | \$157,235.87 | \$155,058.46 | \$38,202.06 |
| PA SOUTH | 16023520801 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 1205'-2", 4", 6" PMLP | BRIDGEPORT ST | 129 | MT | 2017 | \$275,246.61 | \$290,671.55 | \$91,052.25 |
| PA SOUTH | 16023521002 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 529'-4", 6" PMLP | CENTER AV | 129 | MT | 2017 | \$165,986.14 | \$172,516.92 | \$6,958.23 |
| PA SOUTH | 16023521303 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 4381'-2", 4", 6", 8" PMLP | DIAMOND ST | 129 | MT | 2017 | \$850,955.07 | \$879,152.48 | \$297,854.41 |
| PA SOUTH | 16023521501 | 1639241 | RT31 RELOC-MT PLEASANT | 561 | INSTALL 2000'-2", 4", 6", 8" PMLP | COLLEGE AV | 129 | MT | 2017 | \$391,756.30 | \$381,127.59 | \$176,590.10 |
| PA CENTRAL | 16023521700 | 1531168 | ROBINSON RUN POD - CPG LINE 1570 | 561 | INSTALL 250'-4" PMMP | ROBINSON RUN RD | 003 | OAK | 2016 | \$17,638.78 | \$23,047.35 | \$6,577.80 |
| PA SOUTH | 16023521800 | 1639980 | 1508 E. CRAWFORD AVE | 559 | INSTALL 135'-2" PM-LP | 1508 E CRAWFORD AV | 051 | CON | 2016 | \$9,472.35 | \$9,800.50 | \$1,254.00 |
| PA CENTRAL | 16023522400 | 1637686 | UVS 2810 WASHINGTON | 559 | INSTALL 5'-6" PMLP | WASHINGTON RD | 125 | MCM | 2016 | \$536.74 | \$0.00 | |
| PA SOUTH | 16023522700 | 1640110 | 2321 - CHURCH - REPL JO | 557 | INSTALL 125'-4" PM-LP | E CHURCH AV | 051 | MAS | 2017 | \$13,111.16 | \$25,721.65 | \$4,939.93 |
| PA SOUTH | 16023523001 | 1640113 | .321 - 5TH - REPL JO | 557 | INSTALL 1095'-4" PMLP | 5TH ST | 125 | DON | 2016 | \$143,173.88 | \$171,058.84 | \$51,227.23 |
| PA SOUTH | 16023523400 | 1640133 | 770 MONT VW | 559 | INSTALL 385'-2" P-LP | 770 MONTVIEW AV | 051 | MER | 2016 | \$10,751.95 | \$18,045.04 | \$4,363.80 |
| PA SOUTH | 16023524100 | 1640082 | 2033 BALDRIDGE AV-SOUTH CONNELLSVILLE | 559 | INSTALL 150'-2" PLASTIC | 2033 BALDRIDGE AV | 051 | CON | 2017 | \$13,832.29 | \$25,191.44 | \$5,771.99 |
| PA SOUTH | 16023524200 | 1640178 | 605 Walters St | 559 | INSTALL 25'-2" PMLP | 605 WALTER ST | 129 | JEA | 2016 | \$4,591.88 | \$5,646.20 | \$779.30 |
| PA SOUTH | 16023524402 | 1640204 | 2321 - AREFORD - REPL JO | 557 | INSTALL 680'-4" PMLP | AREFORD ST | 051 | UNI | 2017 | \$81,645.28 | \$91,095.19 | \$24,135.00 |
| PA SOUTH | 16023524601 | 1640209 | 2321 - UNION - REPL JO | 557 | INSTALL 865'-4", 45'-2" PMMP | UNION ST | 051 | UNI | 2017 | \$250,174.56 | \$267,910.26 | \$64,679.76 |
| PA SOUTH | 16023524900 | 1640228 | 2321 - HUGHES ST - REPL JO | 557 | INSTALL 400'-2" PM-MP | HUGHES ST | 059 | RIC | 2016 | \$18,746.04 | \$13,630.91 | \$0.00 |

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| PA SOUTH | 16023525401 | 1640253 | 2321 - BELMONT - REPL JO | 557 | INSTALL 3187'-2", 4" PMMP | VIRGINIA AV | 051 | UNI | 2017 | \$500,051.23 | \$476,257.95 | \$251,757.52 |
| PA SOUTH | 16023525601 | 1640253 | 2321 - BELMONT - REPL JO | 557 | INSTALL 6375'-2", 4", 6" PMMP | BELMONT CR | 051 | UNI | 2017 | \$700,021.06 | \$672,840.32 | \$266,733.56 |
| PA CENTRAL | 16023525800 | 1640259 | D-54 BEBOUT REPLACEMENT PROJECT | 557 | INST 3,535'-6" PMP& 330'-2" PMP | D-54 | 125 | VEN | 2017 | \$694,076.52 | \$517,541.06 | \$63,807.99 |
| PA CENTRAL | 16023526000 | 1640293 | BARREWOOD REPLACEMENT PROJECT | 557 | INSTALL 2290'-2" PMMP | BARREWOOD | 125 | WAS | 2017 | \$140,443.35 | \$207,172.66 | \$24,024.82 |
| PA SOUTH | 16023526200 | 1640328 | ROCK ST | 559 | INST / DD 460'-2" PM-MP | ROCK ST | 051 | CON | 2018 | \$48,949.17 | \$52,212.78 | \$8,048.65 |
| PA CENTRAL | 16023528000 | 1640426 | DUNN STATION RD REPLACEMENT | 557 | INSTALL 1000'-2" PMMP | DUNN STATION | 125 | PRO | 2017 | \$128,525.30 | \$95,376.36 | \$0.00 |
| PA SOUTH | 16023528701 | 1639930 | FIRST ST - JEANNETTE - 2321 | 557 | INSTALL 4623'-2" & 4" PMMP | FIRST ST | 129 | JEAN | 2017 | \$669,007.08 | \$762,625.76 | \$424,510.72 |
| PA CENTRAL | 16023529300 | 1640511 | RIDGE AVE SYSTEM SWITCH | 557 | CHANGE SYSTEMS ON RIDGE AVE | RIDGE AV | 125 | CAN | 2016 | \$24,247.67 | \$13,326.40 | |
| PA CENTRAL | 16023529500 | 1640519 | TIMBERLINE DR REPLACEMENT PROJECT | 557 | LAY 6'-2" PMMP, 2'-4" PMMP | TIMBERLINE | 125 | WAS | 2016 | \$5,311.03 | \$3,988.76 | \$421.60 |
| PA SOUTH | 16023530600 | 1641038 | PALMER RD (BRIDGE SR3013, JV562) | 561 | INST 1105'-2" PM-MP | PALMER RD | 051 | ADA | 2017 | \$127,252.71 | \$68,556.21 | \$2,079.80 |
| PA SOUTH | 16023530800 | 1640590 | 2321 - CREST - REPL JO | 557 | INST 4,755'-4" PMMP | CREST AV | 125 | CHA | 2018 | \$993,254.08 | \$1,322,865.43 | \$824,544.29 |
| PA SOUTH | 16023531101 | 1636311 | 2321 - HOPWOOD COOLSPRING - REPL JO | 557 | INST 3806'-2", 4" PMMP-PH1 | BENNINGTON | 051 | HOP | 2018 | \$769,403.02 | \$843,428.47 | \$361,961.65 |
| PA CENTRAL | 16023532001 | 1316607 | D-36 (FOREST LAWN) REPLACEMENT PROJECT | 557 | LAY 3750'-6" PMMP, 178'-2" PMMP | E MCMURRAY | 125 | MCM | 2016 | \$928,332.90 | \$1,207,652.24 | \$400,315.00 |
| PA CENTRAL | 16023532400 | 1640892 | MAPLE AV REPLACEMENT PROJECT | 557 | LAY 30'-4" PMLP | MAPLE AV | 125 | WAS | 2016 | \$8,626.95 | \$10,149.89 | \$590.59 |
| PA SOUTH | 16023533600 | 1640966 | METRINKO - RIDGE / SHERMAN | 557 | INSTALL 247'-2" PMMP | METRINKO | 111 | MEY | 2017 | \$8,121.95 | \$20,337.15 | \$3,787.50 |
| PA CENTRAL | 16023534700 | 1641152 | SR 980 TURNPIKE RELOCATION | 561 | INSTALL 500'-6" PMMP | SR 980 | 125 | MCD | 2017 | \$64,832.56 | \$61,773.25 | |
| PA SOUTH | 16023535001 | 1640945 | 131 E SANNNER ST | 557 | INSTALL 300'-2" PMMP | COURT AL | 111 | SOM | 2017 | \$58,331.29 | \$60,527.66 | \$0.00 |
| PA SOUTH | 16023535500 | 1639982 | CANNAS ST - 2321 | 557 | INSTALL 3495'-2" & 4" PMMP | CANNAS ST | 129 | N H | 2017 | \$749,005.05 | \$848,072.63 | \$268,526.82 |
| PA SOUTH | 16023535901 | 1641154 | 2321 - ALTMAN - REPL JO | 557 | INSTALL 5,701'-2", 4" & 8" PLP | ALTMAN | 129 | JEAN | 2019 | \$1,366,391.48 | \$1,274,245.51 | \$226,260.77 |
| PA CENTRAL | 16023536700 | 1641263 | ORCHARD LANE BETTERMENT | 559 | LAY 135'-2" PMMP | ORCHARD LN | 125 | WAS | 2017 | \$11,453.76 | \$23,897.67 | \$4,137.65 |
| PA SOUTH | 16023537500 | 1639192 | 2321 - ALLEN AVE - REPL JO | 557 | INSTALL 3,045'-2", 4", 6" PMMP | ALLEN AV | 125 | DON | 2017 | \$599,011.94 | \$737,971.99 | \$552,145.45 |
| PA SOUTH | 16023537702 | 1315939 | SOMERSET NORTH | 557 | INSTALL 551'-4" PMMP | W FAIRVIEW ST | 111 | SOM | 2016 | \$96,896.42 | \$90,662.09 | \$7,250.70 |
| PA SOUTH | 16023538200 | 1531682 | 2321 - WESTERN - REPL JO | 559 | INSTALL 16'-6" PLP | SIXTH ST | 129 | IRW | 2016 | \$6,009.35 | \$6,584.03 | |
| PA CENTRAL | 16023538801 | 1316844 | CANONSBURG PHASE II | 557 | INSTALL 4745'-2/4" PMMP | HILLCREST | 125 | CAN | 2018 | \$705,623.91 | \$736,580.21 | \$287,647.25 |
| PA CENTRAL | 16023539901 | 1641655 | SR 980 RELOCATION II | 561 | LAY 260'-6" PMMP | SR 980 | 125 | CEC | 2017 | \$79,358.25 | \$153,941.04 | \$3,822.30 |
| PA CENTRAL | 16023540700 | 1425543 | PM-TANNEHILL POD REPLACEMENT (D-1581) | 559 | PM - D-62 TANNEHILL MP OUTLET | 1480 SR 980 | 125 | CAN | 2016 | \$0.00 | \$0.00 | |
| PA CENTRAL | 16023541400 | 1641752 | LONE PINE RD RELOCATION 2 | 561 | RELOCATE 2" CSMP MAINLINE | LONE PINE RD | 125 | WAS | 2018 | \$184,121.50 | \$151,702.82 | \$10,184.48 |
| PA SOUTH | 16023541701 | 1641784 | 2321 - LOOKOUT AV - REPL JO | 557 | INSTALL 4555'-2" & 4" PMMP | LOOKOUT AV | 125 | DON | 2018 | \$396,843.57 | \$387,072.90 | \$140,080.76 |
| PA CENTRAL | 16023542300 | 1641850 | MT MORRIS & KIRBY RD REPLACEMENT | 557 | REPL 63' 2" BSMP WITH 2" PMMP | MT MORRIS | 059 | WAY | 2017 | \$88,390.24 | \$63,833.22 | \$18,712.10 |
| PA SOUTH | 16023542802 | 1639982 | CANNAS ST - 2321 | 557 | INSTALL 7466'-2" & 4" PMMP | CANNAS ST | 129 | N H | 2018 | \$1,188,503.20 | \$1,172,592.84 | \$559,368.03 |
| PA CENTRAL | 16023543900 | 1641927 | STATION ST BRIDGE RELOCATION | 557 | INSTALL 630'4" PMMP | MARGARETTE | 003 | MCD | 2018 | \$127,681.26 | \$289,051.35 | \$94,947.57 |
| PA CENTRAL | 16023544600 | 1641968 | JACKSON | 559 | INSTALL 530' OF 2" PLP | JACKSON | 125 | HOU | 2017 | \$58,775.41 | \$75,141.52 | \$61,420.28 |
| PA CENTRAL | 16023547000 | 1642209 | 2391 - 4TH - REPL JO | 557 | INSTALL 60'-2" PLP | 4TH | 125 | HOU | 2016 | \$16,980.80 | \$10,641.91 | \$0.00 |
| PA CENTRAL | 16023548701 | 1642342 | FIRST ST REPLACEMENT PROJECT | 557 | INST 1523'-8", 6" & 4" PLP | FIRST ST | 125 | CAN | 2017 | \$504,327.94 | \$585,787.63 | \$9,923.91 |
| PA CENTRAL | 16023549700 | 1642423 | WW RAILROAD REPLACEMENT | 557 | INST 2690'-2" PIP | WW RAILROAD | 059 | SYC | 2017 | \$264,489.54 | \$333,666.53 | \$2,005.68 |
| PA SOUTH | 16023550301 | 1642500 | CHARLEROI D-LINE | 559 | INSTALL 6" TEMPORARY MAIN | SR 2014 | 125 | CHA | 2016 | \$201,449.61 | \$225,620.60 | |
| PA SOUTH | 16023550901 | 1642500 | CHARLEROI D-LINE | 559 | INSTALL 2520 '-8" PMMP SR2014 | SR 2014 | 125 | CHA | 2018 | \$913,108.99 | \$993,822.46 | \$49,403.79 |
| PA EAST | 16024344500 | 1317267 | PM - VILLA VISTA - ORCHARD ACRES | 559 | PM - VILLA VISTA OUTLET INST. | 125 VILLA VISTA | 001 | HAN | 2015 | \$0.00 | \$0.00 | |
| PA EAST | 16024345400 | 1635086 | DOGWOOD RD | 559 | INSTALL 6" CRITICAL VALVE CY2758 | DOGWOOD RD | 133 | DOV | 2016 | \$6,498.05 | \$2,234.03 | |
| PA EAST | 16024345601 | 1636678 | INST CV INLET TO R4362 | 559 | INST CV INLET TO R4362 | US HWY 30 | 133 | YOR | 2016 | \$35,370.62 | \$14,621.68 | \$800.80 |
| PA EAST | 16024346100 | 1424583 | YORK ST | 559 | PM - YORK STREET POD PLASTIC | 963 YORK ST | 133 | HAN | 2015 | \$0.00 | \$0.00 | |
| PA EAST | 16024347000 | 1533029 | 2421 - WOODLAND - REPL JO | 557 | REPLACE MAIN - LEAKAGE | WOODLAND RD | 133 | YOR | 2018 | \$343,396.59 | \$577,786.65 | \$167,890.50 |
| PA EAST | 16024347401 | 1635097 | ELMWOOD BLVD | 557 | INSTALL 2473'-8", 1469'-2" PMP | ELMWOOD | 133 | YOR | 2017 | \$535,967.83 | \$610,145.81 | \$159,332.11 |
| PA EAST | 16024347600 | 1635381 | 2421 - EMIG MILL - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 3130 EMIG MILL RD | 133 | DOV | 2016 | \$7,336.79 | \$13,308.44 | |
| PA EAST | 16024348101 | 1635414 | REYNOLDS ST | 557 | INSTALL 340'-2" PMMP | REYNOLDS | 001 | GET | 2017 | \$40,824.25 | \$28,682.82 | \$10,489.85 |
| PA EAST | 16024349400 | 1635490 | AIKENS PLACE REPLACEMENT | 557 | INST: -505'-2" PMMP | AIKENS | 027 | STA | 2016 | \$65,351.39 | \$73,215.23 | \$43,443.39 |
| PA EAST | 16024349600 | 1635492 | THOMAS ST | 557 | INST: -1100'-4" 82" PMMP | THOMAS ST | 027 | BEL | 2017 | \$269,453.83 | \$347,903.29 | \$260,216.46 |
| PA EAST | 16024350800 | 1635598 | GRANT ST RR LEAK | 557 | INST 220'-8" PMMP | GRANT | 133 | YOR | 2016 | \$97,963.99 | \$161,270.91 | \$31,934.75 |
| PA EAST | 16024351200 | 1635610 | RATHTON & S QUEEN | 557 | INSTALL 510'-4" PMMP | RATHTON RD | 133 | YOR | 2016 | \$71,634.91 | \$64,976.19 | \$20,049.04 |
| PA EAST | 16024351600 | 1534463 | LAWSON CT | 559 | INSTALL 2086' - 2" PMMP | LAWSON CT | 133 | YOR | 2017 | \$194,711.99 | \$335,684.58 | \$234,530.69 |
| PA EAST | 16024352401 | 1534480 | BALTIMORE PIKE | 557 | INST 5,500'-4" PMMP | BALTIMORE PK | 001 | LIT | 2017 | \$711,066.45 | \$758,719.46 | \$115,220.19 |
| PA EAST | 16024353000 | 1635818 | LONGSTOWN TRAILER PARK | 561 | INSTALL 40'-1" MAIN | LYLE CIRCLE | 133 | WIN | 2017 | \$18,386.10 | \$26,119.98 | \$304.20 |
| PA EAST | 16024353600 | 1635862 | 924 CLAYTON - ST. MATT'S | 559 | INST 10'-4" PMMP | 924 CLAYTON AV | 133 | YOR | 2016 | \$8,106.61 | \$4,302.89 | \$0.00 |
| PA EAST | 16024355400 | 1636332 | 2421 - EMIG MILL RD PAVING | 557 | INSTALL -2398'-2" PMMP | EMIG MILL RD | 133 | DOV | 2017 | \$213,988.28 | \$289,532.45 | \$55,164.46 |
| PA EAST | 16024357500 | 1636638 | CHERRY ALLEY MLE | 559 | INSTALL 35'-2" PMMP | E MAIN ST | 133 | DAL | 2016 | \$12,444.54 | \$4,730.68 | \$1,156.00 |
| PA EAST | 16024359800 | 1636805 | W COLLEGE AVE | 557 | INSTALL -1445'-2" PMMP | W COLLEGE AV | 133 | YOR | 2017 | \$312,540.83 | \$638,552.07 | \$485,379.15 |
| PA EAST | 16024360400 | 1636814 | WALLACE ST. | 557 | INST 760'-2" PMMP | WALLACE ST | 133 | YOR | 2017 | \$159,921.71 | \$156,880.11 | \$158,445.76 |
| PA EAST | 16024363100 | 1637258 | WADDLE RD | 561 | RELOCATE 437'-4" PMMP | WADDLE RD | 027 | STA | 2016 | \$31,866.89 | \$16,785.11 | \$2,926.83 |

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|---------|-------------|---------|---------------------------------------|-----|----------------------------------|------------------------|-----|-----|------|----------------|----------------|----------------|
| PA EAST | 16024363501 | 1637328 | HANOVER DOMINOS | 557 | INST 688'-8" PMMP | BALTIMORE ST | 133 | HAN | 2018 | \$262,482.78 | \$418,466.94 | \$206,279.74 |
| PA EAST | 16024363700 | 1637329 | 2421 - EICHELBERGER - REPL JO | 557 | INSTALL -1,370'-2" PMMP | EICHELBERGER ST | 133 | HAN | 2018 | \$261,838.36 | \$228,546.73 | \$151,494.74 |
| PA EAST | 16024364101 | 1637333 | 2421 - BERLIN - REPL JO | 557 | INST 320'-2" PMMP | BERLIN AV | 001 | NEW | 2017 | \$60,152.80 | \$73,089.24 | \$58,639.04 |
| PA EAST | 16024364800 | 1637359 | 2421 - ALLEWALT - REPL JO | 557 | INSTALL -55'-4" PMLP | ALLEWALT | 133 | HAN | 2017 | \$20,973.93 | \$24,601.78 | \$13,335.00 |
| PA EAST | 16024365000 | 1637367 | HOLLYWOOD AVE. | 557 | INSTALL -860'-4" PMLP | HOLLYWOOD | 133 | HAN | 2018 | \$146,745.03 | \$209,601.98 | \$90,640.90 |
| PA EAST | 16024365500 | 1637384 | PAULINE DRIVE - ACROSS FROM VO TECH | 561 | INSTALL 30'-3" PMP | PAULINE DRIVE | 133 | YOR | 2016 | \$5,023.10 | \$1,903.17 | |
| PA EAST | 16024365601 | 1637386 | RAILROAD ST | 557 | INST 335'-4" & 6" PMLP | RAILROAD | 133 | HAN | 2018 | \$128,936.36 | \$180,203.82 | \$84,163.36 |
| PA EAST | 16024366101 | 1637402 | FAIRFIELD PENNDOT REPLACEMENT | 557 | INST 3,385'-4" & 780'-2" PMP PH1 | FAIRFIELD RD | 001 | FAI | 2018 | \$993,385.23 | \$1,277,484.05 | \$421,673.70 |
| PA EAST | 16024367401 | 1533303 | D10132 DREIBELBIS | 559 | PM - D-10132 SHALLOW MAIN REP | DREIBELBIS | 027 | STA | 2019 | \$7,008,231.00 | \$7,592,096.34 | \$2,016.00 |
| PA EAST | 16024368800 | 1637402 | FAIRFIELD PENNDOT REPLACEMENT | 557 | INST640'-4" PMP & 80'-2" PMP PH2 | FAIRFIELD RD | 001 | FAI | 2017 | \$94,359.79 | \$71,570.62 | \$4,008.59 |
| PA EAST | 16024370501 | 1637834 | 122 HIGHLAND AVE | 559 | INSTALL 135'-2" PMMP | HIGHLAND AVE | 133 | NFR | 2018 | \$19,180.50 | \$17,464.02 | \$431.04 |
| PA EAST | 16024372302 | 1637907 | CARLISLE ST BETTERMENT | 559 | INST 4,020'-8" & 750'-2" PMMP | CARLISLE ST | 001 | GET | 2017 | \$1,681,462.91 | \$1,849,751.14 | \$417,338.19 |
| PA EAST | 16024373600 | 1638134 | I83 STREAM CROSSING | 561 | INSTALL TWO 8" SS | HARLAN ST | 133 | YOR | 2016 | \$15,331.55 | \$11,455.25 | |
| PA EAST | 16024374101 | 1638201 | D064372 LEAK REPAIR | 557 | D064372 LEAK REPAIR | DOE RIDGE LN | 027 | BEL | 2016 | \$87,034.86 | \$77,890.17 | |
| PA EAST | 16024375301 | 1638297 | ASPERS-BENDERSVILLE RD RELOCATION | 561 | INST 520'-4" PMMP | ASPERS-BENDERSVILLE RD | 001 | ASP | 2018 | \$183,956.58 | \$182,684.51 | \$9,402.09 |
| PA EAST | 16024376400 | 1638351 | ALLEN & WHITEHALL HP | 559 | INSTALL -100'-8" CSHP | A&W HP | 027 | STA | 2019 | \$76,451.61 | \$259,523.08 | \$82,456.59 |
| PA EAST | 16024377400 | 1638553 | OUTBACK RESTRNT RELO | 561 | INSTALL -510'-2" PMMP | MANCHESTER MALL | 133 | YOR | 2016 | \$4,212.84 | \$7,051.27 | |
| PA EAST | 16024378500 | 1638134 | I83 STREAM CROSSING | 561 | INSTALL -565'-8" PLASTIC | INTERSTATE 83 | 133 | YOR | 2017 | \$87,927.24 | \$80,640.02 | \$4,722.60 |
| PA EAST | 16024381200 | 1638835 | EP 124 | 561 | BORE UNDER BRIDGE SR0124 | E PROSPECT | 133 | WIN | 2017 | \$76,372.35 | \$76,289.99 | \$4,476.77 |
| PA EAST | 16024383200 | 1639046 | 2421 - ATLANTIC - REPL JO | 557 | INST 25'-4" PMLP | ATLANTIC AV | 133 | YOR | 2016 | \$11,788.37 | \$3,310.21 | \$1,791.10 |
| PA EAST | 16024384500 | 1635196 | 2421 - COLLEGE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 500 W COLLEGE | 133 | YOR | 2017 | \$998,816.88 | \$963,209.57 | \$806,393.06 |
| PA EAST | 16024384900 | 1639257 | 2421 - WASHINGTON - REPL JO | 557 | INSTALL 4" SST | WASHINGTON ST | 001 | GET | 2016 | \$10,890.71 | \$9,222.20 | \$1,264.20 |
| PA EAST | 16024386800 | 1639400 | COLLEGE AVE STREECT SCAPE | 559 | INST 20'-2" PMMP | W COLLEGE AV | 027 | STA | 2016 | \$17,464.79 | \$6,725.39 | \$2,482.00 |
| PA EAST | 16024386900 | 1639461 | 2421 - EIGHTH - REPL JO | 557 | INSTALL 350'-4" PLP | EIGHTH | 133 | YOR | 2017 | \$86,325.37 | \$155,338.74 | \$101,406.97 |
| PA EAST | 16024387100 | 1639473 | 2421 - GEORGE - REPL JO | 557 | INSTALL 370'-4" PLP | SIXTH AVE ST | 133 | YOR | 2018 | \$98,130.50 | \$126,920.12 | \$41,813.23 |
| PA EAST | 16024387400 | 1639485 | 2421 - DEWEY - REPL JO | 557 | INSTALL 350'-4" PLP | DEWEY | 133 | YOR | 2019 | \$91,435.50 | \$83,892.59 | \$66,609.19 |
| PA EAST | 16024388300 | 1639541 | 2421 - HIGHLAND - REPL JO | 557 | REPLACE MAIN - LEAKAGE | HIGHLAND RD | 133 | YOR | 2018 | \$282,811.26 | \$259,339.57 | \$59,509.62 |
| PA EAST | 16024393200 | 1639966 | N QUEEN (MARKET TO PHILLY) | 557 | INST -525'-6" & 120'-2" PMLP | N QUEEN | 133 | YOR | 2019 | \$165,712.33 | \$278,674.18 | \$154,410.61 |
| PA EAST | 16024393500 | 1640012 | N QUEEN (PHILLY TO YORK) | 557 | INSTALL -2415'-4&2" PMMP | N QUEEN | 133 | YOR | 2019 | \$594,805.16 | \$629,024.53 | \$407,819.99 |
| PA EAST | 16024393700 | 1640017 | STATE STREET | 557 | INST -535'-4" PMLP | STATE ST | 133 | YOR | 2017 | \$126,629.32 | \$220,193.29 | \$128,230.92 |
| PA EAST | 16024394600 | 1640121 | LITTLESTOWN HIGH PRESSURE REPLACEMENT | 557 | INST 10,920'-8" PMMP | SELLS STATION | 001 | LIT | 2019 | \$1,559,180.21 | \$1,715,262.86 | \$368,384.89 |
| PA EAST | 16024395100 | 1640186 | 6055 CARLISLE RD | 559 | INSTALL -270'-2" PMMP | 6055 CARLISLE RD | 133 | DOV | 2017 | \$18,895.37 | \$13,932.40 | \$782.40 |
| PA EAST | 16024395300 | 1640187 | 759 CLAYTON AVE | 559 | INSTALL -110'-2" PMLP | 759 CLAYTON AV | 133 | YOR | 2017 | \$21,249.95 | \$9,867.84 | \$1,545.24 |
| PA EAST | 16024395800 | 1640218 | WINDBRIAR LN REPLACEMENT | 557 | INST 2,670'-2" PMMP | WINDBRIAR | 001 | GET | 2017 | \$321,708.35 | \$326,445.93 | \$181,264.98 |
| PA EAST | 16024397101 | 1641216 | PRALL LANE | 559 | INSTALL 1500'-2" PMMP | PRALL LANE | 133 | STE | 2018 | \$30,118.51 | \$43,534.49 | \$14,762.80 |
| PA EAST | 16024397300 | 1640455 | 2421 - FREYSVILLE - REPL JO | 557 | INST -85'-2" PMMP | FREYSVILLE | 133 | RED | 2016 | \$17,851.29 | \$14,157.65 | \$7,826.00 |
| PA EAST | 16024397500 | 1640476 | MANOR PHASE 2 | 557 | INST 3134'-2" & 840'-4" PMMP | W MAPLE ST | 133 | YOR | 2018 | \$839,396.86 | \$1,124,468.32 | \$1,020,150.21 |
| PA EAST | 16024397901 | 1640522 | REPLACE C83 - COLLEGE AVE | 557 | REPLACE CRITICAL VALVE C83 | COLLEGE AV | 027 | STA | 2018 | \$98,815.45 | \$82,831.44 | \$9,927.28 |
| PA EAST | 16024398401 | 1640526 | D10018 LEAK & SEAM | 557 | BYPASS D10018 LEAK | D10018 | 027 | SNO | 2016 | \$86,850.81 | \$142,080.25 | |
| PA EAST | 16024398900 | 1640602 | 2421 - STOCK - REPL JO | 557 | INSTALL -903'-2" PMMP | STOCK ST | 133 | HAN | 2017 | \$188,302.86 | \$306,962.94 | \$195,087.72 |
| PA EAST | 16024399100 | 1640621 | E WATER ST HP | 557 | 815'-8", 115'-6", & 685'-2" PHHP | E WATER | 001 | GET | 2017 | \$331,506.68 | \$300,042.03 | \$214,886.46 |
| PA EAST | 16024399400 | 1640656 | N 4TH ST UPRATE | 557 | INST 380'-2" PMMP | E BROADWAY | 001 | GET | 2017 | \$69,183.30 | \$80,400.03 | \$8,114.40 |
| PA EAST | 16024399900 | 1636809 | FILBERT ST | 557 | INSTALL -4160'-4" PMP AND PLP | THIRD | 133 | HAN | 2018 | \$1,026,669.95 | \$1,695,466.91 | \$1,341,722.05 |
| PA EAST | 16024400501 | 1640737 | WILSON AVE | 561 | INSTALL -670'-2" & 4" PMMP | WILSON AV | 133 | HAN | 2017 | \$81,671.90 | \$102,344.38 | \$4,527.60 |
| PA EAST | 16024401801 | 1640918 | 2421 - EAGLE - REPL JO | 557 | INSTALL -780'-2" PMMP | EAGLE | 133 | HAN | 2018 | \$150,916.72 | \$218,790.68 | \$202,600.86 |
| PA EAST | 16024402000 | 1640922 | 2421 - MIDDLE - REPL JO | 557 | INSTALL -400'-2" PMP | E MIDDLE ST | 133 | HAN | 2018 | \$73,017.68 | \$116,351.78 | \$80,515.25 |
| PA EAST | 16024402500 | 1640997 | 2421 - PROSPECT - REPL JO | 557 | INST 5509'-2" PMP & 156'-4" PMP | PROSPECT | 133 | YOR | 2017 | \$1,290,001.36 | \$1,889,870.53 | \$1,619,415.39 |
| PA EAST | 16024403200 | 1641051 | PENNYPACKER HALL STEAM RELOCATION | 561 | RELOCATION -65'-2" CSMP | CURTIN RD | 027 | UNI | 2017 | \$15,142.04 | \$12,651.00 | |
| PA EAST | 16024405400 | 1641319 | HIGH ST | 561 | INSTALL -234'-6" PMMP | HIGH ST | 027 | STA | 2017 | \$50,368.45 | \$53,572.65 | \$1,295.00 |
| PA EAST | 16024407801 | 1641585 | ATHERTON ST PH 2 | 561 | RELOCATE ATHERTON ST PENNDOT | N ATHERTON ST | 027 | STA | 2018 | \$3,958,713.68 | \$4,322,844.42 | \$94,442.60 |
| PA EAST | 16024408400 | 1641638 | 2421 - MCALLISTER - REPL JO | 557 | INSTALL -2300'-2", 50'-4" PMP | MCALLISTER | 133 | HAN | 2019 | \$410,143.39 | \$446,274.84 | \$119,148.80 |
| PA EAST | 16024408902 | 1641720 | FAIRFIELD BRIDGE REPLACMENT | 557 | INST 2,315'-6" PMMP | FAIRFIELD RD | 001 | GET | 2019 | \$869,794.68 | \$984,252.87 | \$75,953.79 |
| PA EAST | 16024409200 | 1641756 | 2451 - CLAY LN | 557 | INST -2420'-PMMP | CLAY LN | 027 | STA | 2017 | \$437,517.37 | \$473,645.59 | \$342,541.90 |
| PA EAST | 16024410000 | 1641818 | 2451 - HOY ST | 557 | INSTALL 120'-2" PMMP IN GRASS | HOY ST | 027 | STA | 2017 | \$19,780.86 | \$32,691.42 | \$2,242.36 |
| PA EAST | 16024410400 | 1641869 | 2451 - ADAMS AVE | 557 | INSTALL 260'-2" PMMP | ADAMS AV | 027 | STA | 2018 | \$21,167.15 | \$15,294.99 | \$0.00 |
| PA EAST | 16024410600 | 1528733 | PM - THOMAS' CORNER POD - D-1661 | 559 | PM - THOMAS CORNER HP OUTLET | SUSQUEHANNA NORTH TL | 133 | YOR | 2016 | \$0.00 | \$79.12 | |
| PA EAST | 16024410800 | 1528733 | PM - THOMAS' CORNER POD - D-1661 | 559 | PM - THOMAS CORNER MP OUTLET | SUSQUEHANNA NORTH TL | 133 | YOR | 2016 | \$0.00 | \$0.00 | |
| PA EAST | 16024412401 | 1641956 | LINCOLN HWY BRIDGE PENNDOT | 561 | DB-300'-6" PMMP | YORK ST | 001 | GET | 2018 | \$168,025.63 | \$178,844.88 | \$8,131.00 |

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| PA EAST | 16024414600 | 1642139 | B ALY | 557 | INSTALL -2115' PMMP | B ALY | 027 | STA | 2019 | \$272,083.68 | \$326,742.64 | \$133,731.33 |
| PA EAST | 16024415301 | 1642181 | STRATTON ST REPLACEMENT | 557 | INST 1,245'-2"PMMP&990'-6"PMMP | N STRATTON | 001 | GET | 2018 | \$770,225.35 | \$961,518.97 | \$794,223.26 |
| PA EAST | 16024415500 | 1642181 | STRATTON ST REPLACEMENT | 557 | INST 1,160'-6"PMPL | N STRATTON | 001 | GET | 2018 | \$317,739.01 | \$547,720.62 | \$170,260.72 |
| PA EAST | 16024417300 | 1636805 | W COLLEGE AVE | 557 | INSTALL --42'-2" PMMP | SHERIDAN | 133 | YOR | 2017 | \$9,724.58 | \$54,324.69 | \$19,166.03 |
| PA EAST | 16024417900 | 1642446 | FAHS STREET AC | 557 | INSTALL -2975'-2" PMMP | 903 FAHS | 133 | YOR | 2018 | \$421,602.98 | \$720,795.33 | \$693,165.18 |
| PA EAST | 16024418200 | 1642476 | GOLF COURSE BRIDGE PENNDOT | 561 | INSTAL 220'-2" PMMP | GOLF COURSE RD | 001 | FAY | 2018 | \$55,002.56 | \$78,005.53 | \$1,711.08 |
| PA EAST | 16024419400 | 1533303 | D10132 DREIBELBIS | 559 | INST 2300'-2" PMMP IN GRASS | GERALD ST | 027 | STA | 2019 | \$224,616.04 | \$214,528.89 | \$22,754.62 |
| PA EAST | 17021389900 | 1743244 | HERITAGE RD LEAK | 557 | INSTALL BYPASS ON REDUCER | 175 HERITAGE RD | 055 | CHA | 2017 | \$4,903.78 | \$3,148.87 | \$480.00 |
| PA EAST | 17021402201 | 1745780 | DUFFIELD RD LEAK | 557 | REPLACE 70'-2"&4" CSHP | DUFFIELD RD | 055 | FAY | 2018 | \$74,712.56 | \$70,383.26 | \$1,912.50 |
| PA EAST | 17021402400 | 1745814 | OREGON ST REPLACEMENT | 557 | REPLACE 260'-2" PMMP (AC) PH1 | OREGON (AC) ST | 055 | MER | 2018 | \$43,925.66 | \$53,448.52 | \$704.00 |
| PA EAST | 17021404900 | 1746273 | 1524 BUCHANAN LEAK REPAIR | 557 | INSTALL 1 3" SS | BUCHANAN | 055 | GRE | 2017 | \$7,158.07 | \$1,138.88 | |
| PA EAST | 17021410000 | 1747585 | MERCERSBURG HP PHASE 1 | 557 | REPLACE 3570'-6" CSHP | MERCERSBURG HP PHASE 1 | 055 | MER | 2019 | \$747,012.93 | \$832,511.84 | \$26,611.30 |
| PA EAST | 17021417900 | 1748958 | COLD SPRING LP REPLACEMENT | 557 | REPLACE 480'-4" PMLP | COLD SPRING RD | 055 | FAY | 2019 | \$94,242.08 | \$156,055.78 | \$36,405.50 |
| PA EAST | 17021418100 | 1749030 | 893 BUCHANAN TRAIL E HP SVC REPLACE | 557 | INSTALL 2 3" SS | BUCHANAN TL | 055 | GRE | 2017 | \$4,663.13 | \$4,452.72 | |
| PA EAST | 17021419100 | 1745814 | OREGON ST REPLACEMENT | 557 | REPLACE 120'-2" PMMP (AC) PH2 | OREGON ST | 055 | MER | 2018 | \$26,960.89 | \$25,022.83 | \$10,080.18 |
| PA CENTRAL | 17022121800 | 1742695 | ARLINGTON AV BROWNSVILLE TO AMANDA | 557 | LAY 410'-8"PMMP & 152'-2"PMMP | ARLINGTON | 003 | PIT | 2017 | \$303,142.74 | \$246,024.47 | \$156,900.01 |
| PA NORTH | 17022122700 | 1636519 | PM - WILMINGTON RD REG STATION REPLACE | 559 | PM - WILMINGTON MP OUTLET | HILLCREST AV | 073 | N-C | 2017 | \$0.00 | \$3,423.13 | |
| PA NORTH | 17022122900 | 1636519 | PM - WILMINGTON RD REG STATION REPLACE | 559 | PM - WILMINGTON RD LP OUTLET | HILLCREST AV | 073 | N-C | 2017 | \$0.00 | \$2,065.27 | |
| PA NORTH | 17022123100 | 1636519 | PM - WILMINGTON RD REG STATION REPLACE | 559 | PM - WILMINGTON RD INLET | HILLCREST AV | 073 | N-C | 2017 | \$0.00 | \$3,222.10 | |
| PA NORTH | 17022123700 | 1742753 | 5TH AVE PH REPLACEMENT | 557 | INSTALL 240'-2" PMLP | 5TH AV PH | 007 | BVR | 2017 | \$34,678.45 | \$28,626.98 | \$16,886.75 |
| PA CENTRAL | 17022124100 | 1742787 | POTOMAC REPLACEMENT PROJECT II | 557 | INST 872'-6",6" & 4"PLP | POTOMAC AV | 003 | PIT | 2017 | \$281,679.66 | \$444,715.29 | \$107,155.84 |
| PA NORTH | 17022124401 | 1742792 | 2231 - SAVANNAH - REPL JO | 557 | OC 1000'-4"PMMP SAVANNAH | SAVANNAH | 073 | N-C | 2017 | \$107,621.18 | \$152,812.75 | \$12,561.84 |
| PA CENTRAL | 17022125500 | 1742835 | FAIRLAND COUPLING REPLACEMENT | 557 | REPLACE LEAKING COUPLING | FAIRLAND | 003 | PIT | 2017 | \$41,044.19 | \$10,243.17 | \$8,647.50 |
| PA CENTRAL | 17022125700 | 1742838 | 2221 - POINTVIEW - REPL JO | 557 | REPLACE 195'-4"PLP | POINTVIEW | 003 | PIT | 2017 | \$74,661.76 | \$91,514.74 | \$44,956.31 |
| PA NORTH | 17022125900 | 1742843 | SR1017 ROAD CROSSING REPLACEMENT | 557 | 50'-2" PM MP | 575 SALEM RD | 005 | SAL | 2017 | \$17,527.19 | \$8,251.34 | |
| PA NORTH | 17022126600 | 1742868 | 2231 - 5TH - REPL JO | 557 | INSTALL 1200'-4" & 2" PMMP | 5TH AV | 007 | BVR | 2017 | \$53,603.42 | \$120,432.87 | \$23,652.60 |
| PA NORTH | 17022128800 | 1742989 | NEW YORK AV RELOCATION | 561 | INSTALL 400'-2" PMLP | NEW YORK AV | 007 | ROC | 2017 | \$48,863.47 | \$50,179.09 | \$10,594.68 |
| PA NORTH | 17022129000 | 1742999 | FARAGUT ST INSULATOR INSTALL | 557 | INSTALL INSULATOR | FARRAGUT ST | 003 | PIT | 2017 | \$72,556.65 | \$56,381.37 | |
| PA CENTRAL | 17022129200 | 1743015 | 2221 - DIANN - REPL JO | 557 | INST 400'-6"PLP | DIANN | 003 | BET | 2017 | \$89,087.61 | \$72,735.67 | \$30,569.67 |
| PA CENTRAL | 17022129400 | 1743018 | 2221 - ALLEN - REPL JO | 557 | INST 10FT - 4"PLP | ALLEN ST | 003 | PIT | 2017 | \$24,956.64 | \$27,185.13 | \$8,609.31 |
| PA CENTRAL | 17022129600 | 1743019 | INSTUSTRY ST R-4680 GATE VALVE | 559 | INST GATE VALVE FOR R-4680 | INDUSTRY ST | 003 | PIT | 2017 | \$10,430.71 | \$14,306.19 | \$5,224.27 |
| PA NORTH | 17022130800 | 1743091 | THIRD AVENUE REPLACEMENT | 557 | INSTALL 575'-6" PMLP | THIRD AV | 123 | WAR | 2017 | \$70,680.13 | \$91,189.29 | \$4,887.54 |
| PA NORTH | 17022132100 | 1743199 | CROTON AVE BS REPL JO | 557 | INSTALL 6010'-4"/400'-2"PMMP | CROTON | 073 | N-C | 2018 | \$912,378.88 | \$1,223,530.39 | \$986,921.64 |
| PA CENTRAL | 17022132900 | 1744587 | HIGHLAND RD REGULATOR REPLACEMENT | 557 | INST 30'-4" HDPE INLET | HIGHLAND | 003 | BET | 2017 | \$40,669.95 | \$50,280.60 | \$0.00 |
| PA CENTRAL | 17022133100 | 1744587 | HIGHLAND RD REGULATOR REPLACEMENT | 557 | INST 50'-6" PIP, 10'-6" CSIP | HIGHLAND | 003 | BET | 2017 | \$80,475.78 | \$11,065.92 | \$5,222.02 |
| PA NORTH | 17022133300 | 1743219 | D-5196 REPLACEMENT PROJECT | 557 | 840'-4" PM IP & 1320'-2" PMIP | D-5196 | 031 | W M | 2017 | \$194,771.65 | \$138,852.92 | \$0.00 |
| PA NORTH | 17022133500 | 1743234 | ROSE STREET REPLACEMENT | 557 | INSTALL -183' OF 2" PMLP | ROSE ST | 073 | N-C | 2017 | \$22,735.43 | \$24,314.96 | \$14,826.96 |
| PA NORTH | 17022133900 | 1743267 | PENNSYLVANIA AVENUE | 561 | INSTALL 700'-4",300'-6"PMPLP | PENNSYLVANIA AVE | 003 | PIT | 2017 | \$198,877.14 | \$170,903.61 | \$135,101.74 |
| PA NORTH | 17022134700 | 1743301 | UNION LANE REPLACEMENT | 557 | INSTALL 760'-4" PMLP | UNION LN | 007 | MID | 2017 | \$79,975.01 | \$28,741.69 | \$10,006.92 |
| PA CENTRAL | 17022135800 | 1743343 | BELROSE REPLACEMENT PROJECT | 557 | INSTALL 900'-4" PMLP | BELROSE AV | 003 | PIT | 2019 | \$196,926.44 | \$394,495.51 | \$202,344.96 |
| PA NORTH | 17022137400 | 1743355 | CASTEEL DRIVE REGULATOR REPLACEMENT | 559 | IN/OUT PIPING 185# SYSTEM | CASTEEL DR | 003 | COR | 2019 | \$22,528.98 | \$2,378.80 | |
| PA NORTH | 17022138702 | 1852962 | CLYMER PHASE 2 | 557 | 3,100'-6" PM MP | CLYMER RD | 063 | CLY | 2018 | \$390,042.69 | \$519,977.56 | \$25,834.03 |
| PA NORTH | 17022138901 | 1743398 | CLYMER BOROUGH AMRP - PHASE 2 | 557 | 3,960'-2",4",6" PM MP | SIXTH ST | 063 | CLY | 2019 | \$1,112,349.35 | \$1,282,094.19 | \$48,725.13 |
| PA NORTH | 17022142800 | 1743603 | BEN AVON HEIGHTS REPLACEMENT | 557 | INSTALL 7000'-6" & 4" PMLP | BEN AVON HEIGHTS RD | 003 | PIT | 2019 | \$1,286,769.21 | \$1,902,777.23 | \$928,435.67 |
| PA NORTH | 17022143800 | 1743708 | MINE SUBSIDENCE DEP JON SMOYER | 559 | INSTALL 4" VALVE | FIELDS RUN RD | 073 | N-C | 2017 | \$13,738.86 | \$10,442.94 | \$0.00 |
| PA NORTH | 17022144200 | 1743713 | STUBER ROAD - REPLACEMENT PROJECT | 557 | 1580'-2" 3250'-4" PMMP STUBER | STUBER RD | 007 | N-B | 2018 | \$651,801.62 | \$495,989.26 | \$94,375.40 |
| PA CENTRAL | 17022145800 | 1743808 | 221 MEYERS REPLACEMENT | 557 | INSTALL 5' 4" PMLP | 221 MEYERS | 003 | PIT | 2017 | \$6,741.84 | \$14,038.85 | \$1,167.20 |
| PA CENTRAL | 17022147100 | 1743959 | REDROSE AVE REPLACEMENT PROJECT | 557 | INST 648'-4"PLP | REDROSE | 003 | PIT | 2018 | \$249,348.73 | \$339,647.77 | \$117,471.36 |
| PA NORTH | 17022147800 | 1533533 | PM - D-82 GSP BETTERMENT | 559 | LAY 270'-4" PPHP | SR 19 | 003 | BRA | 2017 | \$24,793.13 | \$17,309.01 | \$770.00 |
| PA CENTRAL | 17022148400 | 1744033 | DUNN DR REPLACEMENT PROJECT | 557 | INSTALL 1,000'-6" PMLP | DUNN DR | 003 | PIT | 2019 | \$223,035.36 | \$341,637.12 | \$54,221.71 |
| PA CENTRAL | 17022148600 | 1744034 | DAVIS ST VALVE REPLACEMENT | 557 | REPLACE VALVE ON DAVIS AVE | DAVIS AV | 003 | MCK | 2018 | \$46,385.63 | \$48,171.40 | \$0.00 |
| PA CENTRAL | 17022148800 | 1744060 | D-1581 CUSTOMER TRANSFERS | 559 | INSTALL 1125'2" PMMP | 3331 WALTHER | 003 | UPP | 2017 | \$93,441.85 | \$98,172.48 | \$2,676.63 |
| PA CENTRAL | 17022148900 | 1744060 | D-1581 CUSTOMER TRANSFERS | 559 | INSTALL 1235'2" PMLP | BROOKSIDE | 003 | BET | 2017 | \$83,125.73 | \$162,009.40 | \$37,788.28 |
| PA NORTH | 17022149300 | 1744099 | WATER ST REPLACEMENT | 557 | INSTALL 4100'-2" PM LP | WATER ST | 065 | SUM | 2019 | \$268,583.46 | \$330,402.41 | \$23,855.68 |
| PA CENTRAL | 17022149801 | 1744109 | HAYS REPLACEMENT PROJECT | 557 | REPLACE MP LINE ON HAYS AVE | HAYS AV | 003 | PIT | 2018 | \$1,222,220.77 | \$1,344,874.99 | \$511,050.31 |
| PA CENTRAL | 17022150400 | 1744155 | CEDAR BD AND SALEM DR | 557 | INST 141'-6"MDPE | SALEM DR AND CEDAR BVD | 003 | PIT | 2017 | \$61,708.02 | \$98,790.13 | \$45,411.13 |
| PA NORTH | 17022151200 | 1744171 | SQUAW RUN CULVERT REPLACEMENT | 561 | OC 180'-4"PMMP WURTEMBERG RD | WURTEMBERG CUT OFF | 073 | N-C | 2017 | \$64,864.52 | \$57,440.42 | |
| PA NORTH | 17022152100 | 1744201 | REPLACE CRITICAL VALVE | 559 | OC 60'-4"PMMP AND INSTALL VALV | DEEMER AV | 073 | ELL | 2017 | \$35,816.31 | \$43,393.71 | \$2,292.82 |

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|------------|-------------|---------|--|-----|--------------------------------|-----------------------|-----|-----|------|----------------|----------------|----------------|
| PA NORTH | 17022153800 | 1744274 | CASE ST. TEE REPLACEMENT | 557 | INSTALL 16'-4" PMLP FOR TEE | CASE | 007 | ROC | 2017 | \$6,256.61 | \$4,605.61 | \$2,449.20 |
| PA NORTH | 17022154001 | 1744277 | DALZELL AVENUE | 557 | INSTALL 900'-6"PMLP (PAVING) | DALZELL AV | 003 | PIT | 2018 | \$201,848.40 | \$257,147.41 | \$262,022.72 |
| PA NORTH | 17022154801 | 1744297 | D-22 @ MCCMURRAY RUN REPLACEMENT | 557 | DB & OC 2650'-8" PHHP | D-22 | 019 | HAR | 2017 | \$563,499.71 | \$623,944.27 | \$20,800.00 |
| PA NORTH | 17022155001 | 1744307 | BRIGHTON ROAD | 557 | INSTALL 1250'-8", 100'4"PMLP | BRIGHTON RD | 003 | PIT | 2018 | \$412,958.51 | \$477,293.08 | \$32,815.80 |
| PA NORTH | 17022155301 | 1744310 | ALDER AVENUE | 557 | INSTALL 540'-6" PMLP (PAVING) | ALDER | 003 | PIT | 2018 | \$126,472.24 | \$126,630.34 | \$78,125.05 |
| PA CENTRAL | 17022155500 | 1744320 | PROCTOR AT ARLINGTON LEAK REPAIR | 557 | REPLACE LEAKING TEE IN INTERSE | PROCTOR | 003 | PIT | 2017 | \$61,344.25 | \$56,916.74 | \$15,835.35 |
| PA NORTH | 17022156001 | 1744337 | ROCHESTER ROAD | 561 | RELOCATE 1000' 8" CSHP | ROCHESTER ROAD | 019 | CRA | 2018 | \$270,187.76 | \$402,830.37 | |
| PA CENTRAL | 17022156200 | 1744357 | 2221 - MCCULLY ST/ROYCE AV REPLACEMENT | 557 | LAY 1451 FT-2"PMP & 228'-8"PMP | MCCULLY ST/ ROYCE AV | 003 | PIT | 2019 | \$774,992.96 | \$1,354,290.65 | \$520,106.96 |
| PA NORTH | 17022156600 | 1744160 | WARRENDALE BAYNE PENNDOT RELOCATION | 561 | RELOCATE 60'-4" PHHP | WARRENDALE BAYNE | 003 | WAR | 2017 | \$16,059.90 | \$21,380.46 | \$3,775.00 |
| PA NORTH | 17022156800 | 1744381 | 4TH AVE CONWAY - REPLACEMENT | 557 | AC - INSTALL 500' PMLP | 4TH AV | 007 | CON | 2018 | \$139,489.22 | \$148,722.27 | \$71,904.25 |
| PA NORTH | 17022157000 | 1744160 | WARRENDALE BAYNE PENNDOT RELOCATION | 561 | RELOCATE 500' 6" PMMP | WARRENDALE BAYNE | 003 | WAR | 2017 | \$84,925.71 | \$133,501.15 | \$0.00 |
| PA NORTH | 17022157300 | 1744414 | 7TH AVENUE REPLACEMENT | 557 | INSTALL 520'-2" PMLP | 7TH | 123 | WAR | 2017 | \$52,674.13 | \$41,323.96 | \$16,201.00 |
| PA NORTH | 17022157500 | 1744486 | 4011 51ST STREET | 559 | INSTALL 130'-4" PMMP 51ST ST. | 4011 51ST ST | 007 | ROC | 2017 | \$24,779.23 | \$14,461.62 | \$4,642.50 |
| PA CENTRAL | 17022157801 | 1744495 | COLES AVE/ISLAND AVE REPLACEMENT | 557 | INSTALL 2915'-4" PMP | COLES | 003 | MCK | 2019 | \$686,203.23 | \$540,893.14 | \$241,470.00 |
| PA CENTRAL | 17022158100 | 1743957 | LIFESPAC COMMUNITIES | 561 | INSTALL 350'-4" PMLP | FRIENDSHIP CIR | 003 | UPP | 2017 | \$18,131.46 | \$31,577.37 | |
| PA NORTH | 17022158900 | 1744558 | LARCH STREET REPLACEMENT | 557 | OC 280'-4" & 400'-2" PMLP | LARCH ST | 007 | AMB | 2019 | \$171,381.01 | \$119,137.02 | \$96,627.82 |
| PA NORTH | 17022159100 | 1744558 | LARCH STREET REPLACEMENT | 557 | INSTALL 1480'- 2 & 4' PMMP | 11TH ST | 007 | AMB | 2019 | \$351,399.02 | \$153,229.50 | \$9,156.56 |
| PA NORTH | 17022160300 | 1744579 | LEXINGTON AVENUE REPLACEMENT | 557 | INSTALL 2620'-2", 4" PMMP | LEXINGTON AV | 123 | WAR | 2018 | \$343,849.70 | \$434,794.81 | \$461,954.22 |
| PA NORTH | 17022160700 | 1744602 | D-4005 PHASE-2 | 557 | D-4005 PHASE-2 | D-4005 | 123 | WAR | 2018 | \$709,291.91 | \$733,696.73 | \$26,102.85 |
| PA NORTH | 17022161700 | 1744630 | WILLARD AV BRIDGE REPLACEMENT | 561 | DB/OC 700'-2"PMLP (12-31-17) | WILLARD AV | 073 | N-C | 2017 | \$126,093.76 | \$55,836.34 | \$3,627.94 |
| PA NORTH | 17022163500 | 1744740 | 2ND ST. BS REPL PROJECT | 557 | INSTALL 360'-2" PMLP | 2ND ST | 007 | FRE | 2017 | \$74,247.37 | \$80,457.87 | \$34,656.78 |
| PA CENTRAL | 17022163700 | 1744761 | LILLIAN STREET CONFLICT REPLACEMENT | 557 | LAY 50 FT-4"PLP (CATCH BASIN) | LILLIAN ST | 003 | PIT | 2017 | \$10,559.71 | \$15,818.73 | \$6,216.55 |
| PA NORTH | 17022164400 | 1744775 | KENNETH AVE REPLACEMENT | 557 | DB -1700' PMMP | KENNETH AV | 073 | N-C | 2018 | \$155,465.15 | \$171,045.15 | \$67,126.01 |
| PA NORTH | 17022164700 | 1744337 | ROCHESTER ROAD | 561 | INSTALL 1000'-6"PMMP | ROCHESTER ROAD | 019 | CRA | 2018 | \$142,229.47 | \$143,978.74 | \$0.00 |
| PA CENTRAL | 17022165800 | 1744868 | PARK BLVD REPLACEMENT | 557 | PARK BLVD REPLACE 60'-4" PLP | PARK BV | 003 | PIT | 2017 | \$92,055.01 | \$106,456.41 | \$33,645.51 |
| PA NORTH | 17022166400 | 1745580 | COLUMBUS INNERBELT RELO. | 561 | -280'-10" STEEL MP RELOCATION | COLUMBUS INERBELT | 073 | N-C | 2018 | \$277,244.26 | \$244,637.47 | \$71,477.33 |
| PA NORTH | 17022166500 | 1744941 | BEECHWOOD BLVD REPLACEMENT PROJECT | 557 | INSTALL 4491'2", 4" PMMP | BEECHWOOD BV | 007 | ELL | 2019 | \$737,081.42 | \$1,128,312.48 | \$555,134.56 |
| PA NORTH | 17022168600 | 1745120 | DONALD AVENUE | 557 | INSTALL 400'-4" PMMP | DONALD AV | 007 | SEW | 2017 | \$64,242.10 | \$69,847.62 | \$39,168.20 |
| PA CENTRAL | 17022169800 | 1743822 | SCHIECK REPLACEMENT PROJECT | 557 | INST 905-4"PLP | SCHIECK ST | 003 | PIT | 2017 | \$236,326.31 | \$218,185.04 | \$104,253.82 |
| PA NORTH | 17022170300 | 1745250 | SAYE ROAD RELOCATION | 561 | RELOCATE 300'-4" PMMP | SAY RD | 121 | EML | 2017 | \$24,168.51 | \$24,991.88 | |
| PA CENTRAL | 17022171100 | 1745391 | OLD LEBANON CHURCH RD RELOCATION | 561 | RELOCATE 25'-8"-PMMP | OLD LEBANON CHURCH RD | 003 | PIT | 2017 | \$14,077.26 | \$6,505.33 | |
| PA CENTRAL | 17022172100 | 1745496 | MANILLA AVE REPLACEMENT PROJECT | 557 | INST 1063' - 4"PLP | 87 E MANILLA AV | 003 | PIT | 2019 | \$288,226.59 | \$326,280.29 | \$55,706.33 |
| PA NORTH | 17022172300 | 1745528 | D-75 BSHP MICROBIOLOGICAL CORROSION | 557 | D-75 (SR 0065) | D-75 (SR 0065) | 007 | FRE | 2018 | \$1,357,001.95 | \$1,268,465.53 | \$53,676.71 |
| PA CENTRAL | 17022172800 | 1745537 | SPRUCEWOOD REPLACEMENT PROJECT | 557 | INST 1240'-4"PLP | SPRUCEWOOD ST | 003 | PIT | 2017 | \$445,354.51 | \$254,757.53 | \$202,886.07 |
| PA CENTRAL | 17022173201 | 1745568 | 2221 - SINGER - REPL JO | 557 | INSTALL 25'10"HPS | 114 SINGER AV | 003 | MCK | 2017 | \$86,875.58 | \$94,921.52 | \$27,340.82 |
| PA CENTRAL | 17022174900 | 1745619 | ARCATA STREAM BORE | 561 | REPLACE PIPE FOR BRIDGE DEMO | ARCATA ST | 003 | PIT | 2017 | \$150,968.06 | \$147,522.65 | \$0.00 |
| PA NORTH | 17022176400 | 1745670 | STATE STREET - BRADFORD | 557 | INSTALL 960'-2" & 90'-6" PMLP | STATE ST | 083 | BRA | 2019 | \$277,336.67 | \$153,139.65 | \$60,126.73 |
| PA CENTRAL | 17022176700 | 1745685 | 2221 - FISHER ST @KOHNE - REPL JO | 557 | LAYING 30' OF 4" PLP | KOHNE ST | 003 | PIT | 2017 | \$19,401.50 | \$9,984.27 | \$1,852.56 |
| PA CENTRAL | 17022177600 | 1745720 | FLORIEN ST REPLACEMENT PROJECT | 557 | INSTALL 365'-2"4" PMLP | FLORIEN | 003 | PIT | 2018 | \$79,188.10 | \$103,140.73 | \$14,775.50 |
| PA CENTRAL | 17022177800 | 1745737 | DELAWARE ST REPLACEMENT PROJECT | 557 | INSTALL 1,013'-4"PMLP | DELAWARE | 003 | CLA | 2018 | \$183,644.47 | \$170,090.85 | \$26,066.80 |
| PA NORTH | 17022178000 | 1745741 | WILLOWBROOK RD | 557 | INSTALL 2975'-2,4,6"PMMP (DPI) | WILLOWBROOK | 073 | N-C | 2018 | \$374,011.04 | \$267,604.44 | \$40,560.89 |
| PA CENTRAL | 17022180100 | 1745834 | 2221 - ROLAND - REPL JO | 557 | REPLACE 10'-4"PLP | ROLAND | 003 | PIT | 2017 | \$15,853.01 | \$9,766.89 | \$2,243.40 |
| PA CENTRAL | 17022180600 | 1745889 | LINNVIEW AVE REPLACEMENT PROJECT | 557 | INST 4785 -2"PMP, UPRATE 1440' | LINNVIEW | 003 | PIT | 2019 | \$1,870,877.79 | \$1,649,508.61 | \$858,581.36 |
| PA CENTRAL | 17022181101 | 1745920 | AMANDA AV REPLACEMENT (AC) | 557 | INSTALL 1895/ABN 816'(AC) | AMANDA AV | 003 | PIT | 2019 | \$569,415.09 | \$664,819.91 | \$310,933.62 |
| PA CENTRAL | 17022182400 | 1745986 | EDGEMONT VALVE INSTALL | 559 | INSTALL CP8151 | EDGEMONT | 003 | PIT | 2018 | \$7,552.10 | \$7,056.42 | |
| PA NORTH | 17022182900 | 1745983 | 10TH ST REPLACEMENT | 557 | INSTALL 520'-2" PMLP | 10TH ST | 007 | BVR | 2018 | \$49,232.05 | \$14,927.44 | \$0.00 |
| PA NORTH | 17022183300 | 1744160 | WARRENDALE BAYNE PENNDOT RELOCATION | 561 | LAY 150'-4" PHHP | WARRENDALE BAYNE RD | 003 | WAR | 2017 | \$19,369.51 | \$8,212.01 | \$6,873.00 |
| PA CENTRAL | 17022184100 | 1746065 | 2221 - ROCKWOOD - REPL JO | 557 | REPLACE MAIN - LEAKAGE | ROCKWOOD | 003 | PIT | 2017 | \$14,722.42 | \$22,229.12 | \$3,091.29 |
| PA NORTH | 17022186100 | 0884802 | PH1 & PH2 CORAOPOLIS NEW TUBE PROJECT | 557 | \$25K FOR CONSIDERATION | MONTOUR ST | 003 | COR | 2017 | \$25,014.00 | \$9.22 | |
| PA NORTH | 17022187000 | 1746169 | 2ND STREET PENNDOT PROJECT | 561 | OC 650'-2"PMMP 200'-2"PMLP | 2ND ST | 073 | ELL | 2017 | \$143,319.12 | \$130,157.65 | \$49,175.05 |
| PA CENTRAL | 17022188100 | 1746180 | 2221 - WINDGAP - REPL JO | 557 | INST 25-6"PLP | WINDGAP AV | 003 | PIT | 2018 | \$48,162.72 | \$33,790.62 | \$1,667.23 |
| PA CENTRAL | 17022188900 | 1746190 | KATHY ST REPLACEMENT | 557 | INST 1720'-4" & 2" PMMP | KATHY | 003 | SPA | 2017 | \$436,543.53 | \$343,740.38 | \$168,406.69 |
| PA NORTH | 17022189100 | 1746209 | PLANK RD RELOCATE | 561 | INSTALL -80'-4" PMLP | PLANK RD | 073 | N-C | 2017 | \$23,209.01 | \$23,676.05 | \$3,903.42 |
| PA NORTH | 17022190200 | 1746266 | UPLAND AVE REPLACEMENT PROJECT | 557 | INSTALL 681'-4" PMLP (AC) | UPLAND AV | 007 | BEA | 2019 | \$113,949.62 | \$109,255.37 | \$34,865.49 |
| PA CENTRAL | 17022190500 | 1639587 | BON AIR REPLACEMENT PROJECT | 557 | INSTALL 3,514' OF 8" HDPE | BAUSMAN | 003 | PIT | 2019 | \$1,012,996.52 | \$1,671,419.35 | \$730,682.87 |
| PA NORTH | 17022190800 | 1746306 | ALBORN AVENUE AMRP | 557 | INSTALL 5023' OF 2" & 4" PMMP | ALBORN AV | 073 | N-C | 2018 | \$617,209.68 | \$638,255.55 | \$254,061.72 |
| PA NORTH | 17022194200 | 1746470 | 2ND STREET BEAVER AMRP | 557 | INSTALL 240'-8" PMLP (DPI) | 2ND ST | 007 | BEA | 2019 | \$93,975.16 | \$406,244.25 | \$13,728.36 |
| PA NORTH | 17022194400 | 1746470 | 2ND STREET BEAVER AMRP | 557 | INSTALL 5680'-2, 4, & 6" PMMP | 2ND ST | 007 | BEA | 2018 | \$1,335,520.70 | \$1,793,129.98 | \$1,055,008.74 |

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| PA NORTH | 17022194600 | 1746470 | 2ND STREET BEAVER AMRP | 557 | INSTALL 4200'-6" PHHP | 2ND ST | 007 | BEA | 2018 | \$550,748.68 | \$1,060,629.03 | \$772,594.13 |
| PA CENTRAL | 17022194800 | 1746475 | SUNNYLAND AVE REPLACEMENT PROJECT | 557 | INSTALL 642'-6"PLP | SUNNYLAND AV | 003 | PIT | 2017 | \$233,988.36 | \$321,023.02 | \$235,367.17 |
| PA NORTH | 17022195100 | 1746534 | INSURANCE STREET OPERATIONS PROJECT | 557 | INSTALL 20'-2" PMLP | INSURANCE ST | 007 | BEA | 2017 | \$9,968.00 | \$3,636.66 | \$3,328.80 |
| PA NORTH | 17022195700 | 1746566 | TURNPIKE ST REPLACEMENT (AC) | 557 | INSTALL 4040'-4"/440'-6" PMLP | TURNPIKE ST | 007 | BEA | 2018 | \$958,820.16 | \$1,200,341.51 | \$212,139.43 |
| PA NORTH | 17022196600 | 1746607 | R-2234 INLET LEG REPLACEMENT | 557 | INSTALL NEW INLET LEG | BIG SEWICKLEY CR RD | 007 | AMB | 2018 | \$23,341.10 | \$38,351.88 | |
| PA CENTRAL | 17022198400 | 1746795 | SAW MILL RUN BLVD PROJECT | 559 | EXTEND M/L W/180'-1.25" PMLP | OVERBROOK | 003 | PIT | 2017 | \$18,926.49 | \$52,892.74 | \$14,075.72 |
| PA CENTRAL | 17022198600 | 1746849 | 2221 - NANTUCKET - REPL JO | 557 | INST 10'-1.25"PIP | NANTUCKET | 003 | PIT | 2017 | \$11,977.28 | \$3,572.47 | \$0.00 |
| PA NORTH | 17022199400 | 1746879 | BIRCH STREET REPLACEMENT | 557 | DB 175' OF 4" PMMP | BIRCH ST | 063 | CLY | 2017 | \$48,257.27 | \$4,791.17 | \$0.00 |
| PA CENTRAL | 17022200601 | 1746984 | 2221 - ARDEN - REPL JO | 557 | LAY 997'-8",2024-4",400'-2"PMP | ARDEN RD & MARLIN DR W | 003 | PIT | 2019 | \$1,491,010.46 | \$1,710,108.26 | \$387,876.87 |
| PA NORTH | 17022200800 | 1746999 | 2234 - SR 2009 - REPL JO | 557 | INSTALL 50'-1.25" PMMP | SR 2009 | 031 | RIM | 2017 | \$12,100.14 | \$1,931.74 | |
| PA CENTRAL | 17022201400 | 1747025 | MARKHAM MAINLINE EXTENSION | 557 | INST 200'-2" PLP | MARKHAM | 003 | PIT | 2017 | \$29,001.65 | \$12,315.80 | \$0.00 |
| PA CENTRAL | 17022201600 | 1747040 | GALBRAITH ST REPLACEMENT PROJECT | 557 | INSTALL 680'-PLASTIC LP | GALBRAITH | 003 | PIT | 2017 | \$63,217.32 | \$283,804.87 | \$50,471.51 |
| PA NORTH | 17022202001 | 1747057 | D-4227 ALLEGHENY RIVER CROSSING | 557 | INSTALL 1,845'-8" PHHP | D-4227 | 123 | WAR | 2019 | \$370,661.29 | \$868,004.56 | |
| PA NORTH | 17022203200 | 1531995 | LOVI ROAD BETTERMENT (R-4548) | 559 | INSTALL 1120'-2" PMMP | FREEDOM CRIDER RD | 007 | FRE | 2018 | \$178,628.41 | \$133,155.27 | \$7,880.70 |
| PA NORTH | 17022203600 | 1747194 | PENTLAND AVE. BETTERMENT | 559 | INSTALL 320'-2" PMLP | PENTLAND AV | 007 | ROC | 2017 | \$44,172.55 | \$14,559.66 | \$4,392.50 |
| PA NORTH | 17022204700 | 1533105 | SCHOOL ST. REPLACEMENT | 559 | INSTALL 80'-4" PMMP | CALIFORNIA AV | 003 | AVA | 2017 | \$29,911.62 | \$33,566.54 | \$9,393.60 |
| PA NORTH | 17022207500 | 1747492 | 2231 - ERDNER - REPL JO | 557 | LAY 205'-2" PMLP | ERDNER ST | 003 | PIT | 2017 | \$22,249.47 | \$80,058.81 | \$37,157.14 |
| PA NORTH | 17022207700 | 1747496 | FRANKLIN AVE REPLACEMENT | 557 | OC-725'-2"PMMP, 2,525'-4"PMMP | FRANKLIN | 073 | ELL | 2018 | \$799,800.64 | \$807,551.12 | \$534,915.66 |
| PA NORTH | 17022208400 | 1747539 | D-22 @ KAY ROAD REPLACEMENT | 557 | OC & DB 8,790'-8" PHHP | KAY RD | 019 | HAR | 2018 | \$1,305,774.39 | \$832,925.81 | \$0.00 |
| PA CENTRAL | 17022209701 | 1639587 | BON AIR REPLACEMENT PROJECT | 557 | INSTALL 2905' OF 4" PMMP | INSTITUTE | 003 | PIT | 2019 | \$1,070,875.50 | \$1,323,312.53 | \$302,959.32 |
| PA CENTRAL | 17022212300 | 1747819 | HOODRIDGE REPLACEMENT PROJECT | 557 | INSTALL 4372'-2",4",6" PMMP | HOODRIDGE | 003 | PIT | 2019 | \$952,341.88 | \$994,233.93 | \$71,820.66 |
| PA CENTRAL | 17022212701 | 1746190 | KATHY ST REPLACEMENT | 559 | INSTALL 500'-2" PMP | KATHY ST | 003 | SPA | 2018 | \$53,627.10 | \$31,668.66 | \$1,736.22 |
| PA NORTH | 17022212800 | 1747824 | 2231 - 7TH - REPL JO | 557 | INSTALL 640'-4" PMMP 7TH AVE | W 7TH AV | 007 | BVR | 2017 | \$65,475.95 | \$87,323.88 | \$16,045.40 |
| PA CENTRAL | 17022214200 | 1747870 | COPPERFIELD & PARKFIELD INTERSECTION | 557 | REPLACE MAIN - LEAKAGE | COPPERFIELD AV | 003 | PIT | 2017 | \$23,934.60 | \$53,321.81 | \$20,883.25 |
| PA NORTH | 17022216400 | 1748087 | HALL ROAD ACTIVE CORROSION 9/29/19 | 557 | INST 1287'-4"PMIP AC 9/31/19 | HALL RD | 007 | ALI | 2019 | \$124,928.00 | \$203,313.06 | \$38,442.07 |
| PA NORTH | 17022216600 | 1748088 | OHIO RIVER BLVD ACT. CORROSION 9/30/19 | 557 | LAY 1745'-4" PMMP SR 65 (AC) | OHIO RIVER | 003 | PIT | 2019 | \$481,115.65 | \$424,160.20 | \$170,787.40 |
| PA NORTH | 17022217000 | 1748090 | PINNEY ST ACTIVE CORROSION | 557 | ACTIVE CORROSION PINNEY | PINNEY ST | 007 | ROC | 2019 | \$88,863.17 | \$177,052.17 | \$76,262.91 |
| PA CENTRAL | 17022217400 | 1748121 | 2221 - HOMEHURST - REPL JO | 557 | INST 190'-4"PLP | HOMEHURST AV | 003 | PIT | 2017 | \$16,247.73 | \$84,379.59 | \$43,873.35 |
| PA CENTRAL | 17022217600 | 1748215 | KENBERMA AVE PROJECT | 557 | INSTALL 10'-6"PLP | 1400 KENBERMA AV | 003 | PIT | 2018 | \$30,554.90 | \$17,176.51 | \$7,496.43 |
| PA NORTH | 17022219900 | 1748310 | FOSTER BROOK BRIDGE RELOCATION | 561 | RELOCATE 240'-4" PMMP | SR 346 | 083 | BRA | 2018 | \$24,431.86 | \$31,218.80 | |
| PA NORTH | 17022222100 | 1748395 | BOROUGHLINE ST REPLACEMENT PROJECT | 557 | OC -566'-4" & 6" PMLP | BOROUGHLINE ST | 073 | N-C | 2018 | \$115,727.81 | \$85,587.67 | \$35,008.82 |
| PA NORTH | 17022223200 | 1748397 | FLORENCE STREET REPLACEMENT PROJECT | 557 | OC 4,330' OF 2" & 4" PMMP | FLORENCE ST | 073 | N-C | 2019 | \$666,977.00 | \$584,206.85 | \$324,864.98 |
| PA CENTRAL | 17022223201 | 1748473 | RUSSELLWOOD ACTIVE CORROSION | 557 | INST 3125'- 4", 2" PHP | RUSSELLWOOD | 003 | MCK | 2019 | \$907,891.63 | \$629,962.55 | \$431,324.01 |
| PA NORTH | 17022224000 | 1748511 | OLD MERCER RD BETTERMENT PROJECT | 559 | INSTALL -1840' OF 2" & 6" PIP | OLD MERCER RD | 073 | N-C | 2019 | \$291,787.70 | \$1,012,646.48 | \$55,637.40 |
| PA NORTH | 17022224800 | 1748586 | 8TH STREET RELOCATION | 561 | INSTALL 160'-2" PMLP | 8TH ST | 007 | FRE | 2018 | \$8,121.79 | \$4,818.67 | \$518.10 |
| PA NORTH | 17022226501 | 1748688 | S. FREMONT REPLACEMENT | 557 | INSTALL 1320'-8",70'-4"PMLP | S. FREMONT | 003 | PIT | 2018 | \$471,994.85 | \$542,904.29 | \$281,328.43 |
| PA NORTH | 17022226800 | 1638577 | CRESCENT HEIGHTS AMRP - REPLACEMENT | 557 | LAY 2,415'-8" PMMP MERCER RD | MERCER RD | 007 | N-B | 2018 | \$544,620.18 | \$588,568.05 | \$34,804.05 |
| PA NORTH | 17022228500 | 1748755 | 2231 - SYLVIA - REPL JO | 557 | LAY 20'-4" PMLP | SYLVIA | 003 | PIT | 2017 | \$12,798.26 | \$25,833.02 | \$7,518.00 |
| PA CENTRAL | 17022229400 | 1748815 | 2221 - MARLIN - DR. E / ARDEN RD | 557 | DRILL 213'-8"PMP, 521'-2" PMP | MARLIN DR E. | 003 | PIT | 2019 | \$196,247.59 | \$233,984.22 | \$19,713.20 |
| PA NORTH | 17022230100 | 1636578 | ROBINSON TOWN CENTRE REG | 559 | INLET PIPING REG 4810 | ROBINSON TOWN CENTER | 003 | ROG | 2017 | \$0.00 | \$0.00 | |
| PA CENTRAL | 17022230500 | 1748849 | 2221 - ROYCE - REPL JO | 557 | LAY 1080'-8"PMP,80'-4",20'-2" | ROYCE AV | 003 | PIT | 2019 | \$633,475.56 | \$715,494.12 | \$250,956.49 |
| PA CENTRAL | 17022230700 | 1745889 | LINNVIEW AVE REPLACEMENT PROJECT | 557 | INSTALL 6763'-2"PMP | BIRMINGHAM | 003 | PIT | 2019 | \$1,798,586.96 | \$1,754,639.04 | \$839,960.96 |
| PA NORTH | 17022230900 | 1748864 | S. FREEMONT MP | 559 | INSTALL 220' - 4" PMMP | S. FREMONT STREET | 003 | PIT | 2017 | \$55,029.55 | \$59,385.98 | \$30,033.54 |
| PA CENTRAL | 17022231400 | 1748878 | SOUTH SIDE PHASE 5 | 557 | INSTALL 4,464' PMMP | SOUTH SIDE PHASE V | 003 | PIT | 2019 | \$1,676,739.16 | \$1,297,153.23 | \$797,534.87 |
| PA NORTH | 17022233500 | 1747496 | FRANKLIN AVE REPLACEMENT | 557 | INSTALL 340'-2"PMLP | DIVISION AV | 073 | ELL | 2018 | \$10,102.42 | \$28,350.85 | \$1,180.00 |
| PA NORTH | 17022233700 | 1749016 | OLEAN RD BRIDGE RELOCATION | 561 | RELOCATE 240'-4" PMMP | SR 646 | 083 | BRA | 2018 | \$30,536.14 | \$29,921.05 | |
| PA CENTRAL | 17022234700 | 1749071 | 2221 - GREENRIDGE REPL JO | 557 | REPLACE MAIN - LEAKAGE | GREENRIDGE | 003 | PIT | 2017 | \$18,846.68 | \$74,221.27 | \$19,875.23 |
| PA NORTH | 17022235400 | 1749094 | FREEDOM - 6TH AVENUE REPLACEMENT | 557 | INSTALLING 2096'-2, 4, 6" PMLP | 6TH AV | 007 | FRE | 2019 | \$454,917.70 | \$518,561.89 | \$336,720.72 |
| PA NORTH | 17022235700 | 1749101 | 2231 - CLAY - REPL JO | 557 | LAY 100'-2" PMLP DUE TO WATER | CLAY ST | 007 | ROC | 2017 | \$18,396.80 | \$21,296.70 | \$6,058.13 |
| PA CENTRAL | 17022238200 | 1749213 | STETSON INSULATOR | 559 | INSTALL 10" INSULATOR | STETSON | 003 | PIT | 2018 | \$33,975.89 | \$50,092.71 | |
| PA NORTH | 17022241001 | 1749446 | N. BOUNDARY PHASE 2 | 561 | DB-820'-6" PMMP | N BOUNDARY PHASE 2 | 019 | CRA | 2018 | \$137,106.08 | \$104,359.39 | |
| PA NORTH | 17022241500 | 1749424 | JEFFERSON STREET AREA REPLACEMENT | 557 | 3,955'-2", 4", 6" PMMP | JEFFERSON | 083 | BRA | 2018 | \$772,323.67 | \$811,949.63 | \$910,809.16 |
| PA NORTH | 17022241900 | 1749448 | 2231 - PARK - REPL JO | 557 | LAY 100'-4" PMLP PARK RD | PARK RD | 007 | AMB | 2017 | \$15,668.73 | \$36,944.72 | \$10,174.65 |
| PA NORTH | 17022242100 | 1636044 | HAMILTON ST AMRP | 557 | INSTALL 960'-4" PM LP | SYCAMORE | 003 | N-C | 2019 | \$115,988.39 | \$176,961.92 | \$68,475.22 |
| PA CENTRAL | 17022242600 | 1636240 | PM - D-1581 WASHINGTON JUNCTION | 559 | PM - WASH JUNCTION OUTLET | MILFORD DR | 003 | BET | 2017 | \$0.00 | \$0.00 | |
| PA CENTRAL | 17022242800 | 1749494 | SOUTHERN LEAK REPAIR 12/11/17 | 557 | REPLACE 5' | SOUTHERN | 003 | PIT | 2017 | \$4,342.37 | \$0.00 | |
| PA NORTH | 17022243100 | 1749499 | BLACKBURN ROAD RELOCATION | 561 | RELOCATE 120'-2"PMMP | BLACKBURN ROAD | 003 | SEW | 2018 | \$36,728.77 | \$45,884.67 | \$10,273.35 |
| PA NORTH | 17022244100 | 1749530 | HIGHLANDS ROAD REPLACEMENT | 557 | OC & DB - 6950'-2" PMMP | HIGHLANDS RD | 121 | EML | 2018 | \$358,910.83 | \$333,508.64 | \$0.00 |

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|------------|-------------|---------|--------------------------------------|-----|----------------------------------|---------------------|-----|-----|------|----------------|----------------|--------------|
| PA CENTRAL | 17022244301 | 1749545 | SUNNYHILL | 557 | INSTALL 1720'-4" PMP MAIN | SUNNYHILL | 003 | PIT | 2019 | \$479,447.17 | \$610,532.10 | \$267,569.97 |
| PA CENTRAL | 17022244700 | 1749548 | 2221 - BOGGS - REPL JO | 557 | INSTALL 2098'OF 6"+4" PLP MAIN | BOGGS | 003 | PIT | 2018 | \$398,455.16 | \$863,032.03 | \$474,471.66 |
| PA NORTH | 17022245400 | 1641020 | GLEN MITCHELL BETTERMENT | 559 | INSTALL 120'-6" PHHP | RT 65 | 003 | SEW | 2018 | \$43,521.66 | \$38,323.61 | \$1,209.50 |
| PA NORTH | 17022245700 | 1638577 | CRESCENT HEIGHTS AMRP - REPLACEMENT | 557 | INSTALL 210'-2" PMLP | DAVE ST | 007 | N-B | 2018 | \$50,008.00 | \$769.38 | |
| PA CENTRAL | 17022246801 | 1749684 | HORNING RD REPLACEMENT PROJECTS | 557 | INST 515-8" PLP & 290'-6" PLP | HORNING - LP RD | 003 | BET | 2018 | \$248,785.34 | \$367,357.08 | \$53,622.68 |
| PA NORTH | 17022247900 | 1749717 | WATSON STREET ACTIVE CORROSION | 557 | 1825'-4" PMMP- AC 9/30/19 | WATSON | 003 | COR | 2019 | \$421,482.86 | \$546,509.40 | \$265,620.18 |
| PA NORTH | 17022248100 | 1749718 | DROZ AVE REPLACEMENT - AC 12/21/19 | 557 | OC-2,202'-2" PMMP AC 12/21/19 | DROZ AV | 007 | AMB | 2019 | \$393,741.98 | \$388,559.80 | \$217,762.53 |
| PA CENTRAL | 17022248301 | 1634931 | ARLINGTON AVE REPLACEMENT PROJECT | 557 | 03LINTON AVE PHASE 2 | ST PATRICK ST | 003 | PIT | 2018 | \$328,396.22 | \$474,872.20 | \$350,351.41 |
| PA NORTH | 17022248700 | 1642497 | DAVIDSON STREET REPLACEMENT | 557 | INSTALL 230'-2" PM LP | AIKEN | 007 | ELL | 2018 | \$25,736.71 | \$11,332.88 | \$1,038.40 |
| PA NORTH | 17022249000 | 1635861 | ABN R-1540 INST R-4793 | 559 | INLET PIPING R-4793 | WALLROSE HEIGHTS RD | 007 | AMB | 2019 | \$24,305.25 | \$22,112.62 | |
| PA NORTH | 17022249400 | | | 559 | LAY 300'-2" PMLP | LINDEN | 073 | ELL | 2018 | \$29,620.37 | \$19,486.87 | \$4,706.94 |
| PA SOUTH | 17023551500 | 1636485 | 2321 - DERRICK - REPL JO | 559 | INSTALL 642'-2" PMMP | OCONNELL AV | 051 | UNI | 2017 | \$86,837.47 | \$96,772.01 | \$29,758.67 |
| PA SOUTH | 17023551800 | 1742601 | 2321 - BROADWAY - REPL JO | 557 | INSTALL 2039'-4" PLP | BROADWAY | 129 | N H | 2017 | \$321,490.21 | \$447,961.27 | \$178,553.26 |
| PA SOUTH | 17023552000 | 1742608 | MAPLE STREET | 557 | INSTALL 2404'-2" & 4" PLP | MAPLE ST | 129 | JEA | 2017 | \$253,554.05 | \$249,216.69 | \$172,776.27 |
| PA CENTRAL | 17023553100 | 1742726 | WYLIE REPLACEMENT PROJECT | 557 | INST 683'-2" PMP | WYLIE AV | 125 | STR | 2017 | \$99,721.99 | \$74,972.02 | \$15,780.61 |
| PA CENTRAL | 17023553300 | 1742727 | NORTH AVE REPLACEMENT PROJECT | 557 | INST 606'-2" P LP | NORTH AV | 125 | HOU | 2017 | \$64,616.15 | \$50,381.38 | \$18,823.52 |
| PA SOUTH | 17023555100 | 1745149 | LOIS MINNICK'S PROPERTY | 559 | INST 4'-8" WTHP - D-8528 | D- 8528 | 051 | UNI | 2017 | \$38,155.56 | \$70,211.04 | \$17,556.00 |
| PA SOUTH | 17023555300 | 1742863 | 2321 - RANCH - REPL JO | 557 | INSTALL 40'-2" PLASTIC | RANCH RD | 051 | DUN | 2017 | \$5,558.09 | \$50.25 | \$0.00 |
| PA CENTRAL | 17023555700 | 1742886 | LENORE WAY REPLACEMENT | 557 | INSTALL 2730'-2" PMMP | LENORE | 125 | MCM | 2017 | \$231,509.75 | \$254,382.72 | \$12,802.78 |
| PA CENTRAL | 17023556900 | 1742998 | HENDERSON AVENUE REPLACEMENT PROJECT | 557 | INSTALL 1,710'-6"/275'-2" PMMP | HENDERSON AV | 125 | WAS | 2017 | \$199,454.68 | \$226,210.68 | \$11,842.26 |
| PA CENTRAL | 17023557700 | 1743107 | LIBERTY STREET VALVE ABANDON | 559 | INSTALL 68'-4" PMMP | LIBERTY ST | 125 | W-A | 2017 | \$52,716.06 | \$30,677.24 | \$0.00 |
| PA CENTRAL | 17023558900 | 1743225 | DOLLAR GENERAL RELOCATION | 561 | LOWER 10'-8" PMMP | JEFFERSON AV | 125 | WAS | 2017 | \$8,392.57 | \$14,058.87 | |
| PA SOUTH | 17023559500 | 1743246 | 2321 - BROWN-RT40 - REPL JO | 557 | INSTALL 1633'-2", 4" & 6" PMMP | SR2040 (E MAIN ST) | 051 | UNI | 2017 | \$361,156.02 | \$375,834.87 | \$165,241.95 |
| PA CENTRAL | 17023559700 | 1533395 | MANZINI REGULATOR REPLACEMENT | 557 | INSTALL 1,860'-4" PMMP | SYGAN RD | 003 | MCD | 2017 | \$213,682.73 | \$321,309.61 | \$27,135.85 |
| PA CENTRAL | 17023559900 | 1533395 | MANZINI REGULATOR REPLACEMENT | 557 | INSTALL 42'-2" STEEL HP | SYGAN RD | 003 | MCD | 2017 | \$14,801.58 | \$194,186.05 | \$246.60 |
| PA SOUTH | 17023560100 | 1743261 | 2321 - CURRY - REPL JO | 557 | INST 200'-2" PMMP | CURRY RD | 129 | STP | 2017 | \$21,925.85 | \$36,307.94 | \$4,228.80 |
| PA CENTRAL | 17023562400 | 1743430 | PRETZEL FACTORY ABANDONMENT | 559 | INSTALL 4" STOPPLE | SWIHART RD | 125 | CAN | 2017 | \$4,310.15 | \$6,380.59 | |
| PA SOUTH | 17023562801 | 1743444 | INDEPENDENCE ST | 557 | INSTALL 1130'-6", 4", 2" PMMP | INDEPENDENCE ST | 051 | PER | 2017 | \$246,453.48 | \$331,505.94 | \$4,015.72 |
| PA SOUTH | 17023563202 | 1636257 | FAYETTE ST / MORGANTOWN ST | 557 | INSTALL 857'-6" P, 270'-2" P | FAYETTE ST | 051 | UNI | 2017 | \$511,949.08 | \$488,132.11 | \$32,900.11 |
| PA SOUTH | 17023563600 | 1636257 | FAYETTE ST / MORGANTOWN ST | 557 | INST 3381'-4" PMP, 1515'-2" PMP | MORGANTOWN ST | 051 | UNI | 2017 | \$1,160,421.95 | \$1,064,560.68 | \$599,719.03 |
| PA CENTRAL | 17023563800 | 1639609 | SUMMERLEA REPLACEMENT PROJECT | 557 | LAY 345'-6", 10'-4" PMLP | SUMMERLEA | 125 | WAS | 2017 | \$28,316.76 | \$67,805.52 | \$797.34 |
| PA SOUTH | 17023564100 | 1743476 | 144 SCOTT LANE | 559 | INSTALL 425'-2" PMMP | 144 SCOTT LN | 051 | N S | 2017 | \$17,248.90 | \$22,014.08 | \$1,980.00 |
| PA CENTRAL | 17023564400 | 1743524 | KIMBER DRIVE REPLACEMENT | 557 | INSTALL -3665' PLP | 100 KIMBER DR | 125 | MCM | 2018 | \$466,764.33 | \$546,750.96 | \$135,198.34 |
| PA SOUTH | 17023564700 | 1642492 | SR0166 BRIDGE PROJECT-JV483 | 561 | RELOCATE 350'-4" PM-MP | SR0166 | 051 | REP | 2017 | \$66,935.44 | \$166,080.64 | \$123.30 |
| PA CENTRAL | 17023566101 | 1743635 | SHORT ST REPLACEMENT PROJECT | 557 | LAY 750'-4" PMLP, 115'-2" PMLP | SHORT ST | 125 | CAN | 2017 | \$90,314.34 | \$211,238.20 | \$80,836.17 |
| PA CENTRAL | 17023566500 | 1743644 | NORTH JEFFERSON REPLACEMENT PROJECT | 557 | INST 1025'-4" PMMP | N JEFFERSON | 125 | CAN | 2017 | \$247,900.33 | \$212,189.56 | \$198,464.96 |
| PA SOUTH | 17023566701 | 1743662 | SR 0048 | 561 | INST 443'-4" PMMP | SCENERY DR | 003 | ELI | 2018 | \$126,717.36 | \$170,535.86 | \$7,215.90 |
| PA CENTRAL | 17023567200 | 1743697 | SR 519 RELOCATION PROJECT | 561 | 1128'-6", 1940'-4", 624'-2" PMMP | SR 519 | 125 | EIG | 2019 | \$453,592.81 | \$910,066.05 | \$29,615.26 |
| PA CENTRAL | 17023569000 | 1743813 | FOUR STARS PIPE & SUPPLY RELOCATION | 561 | RELOCATE 130'-2" PMMP | 948 ROUTE 519 | 125 | EIG | 2017 | \$6,845.90 | \$12,345.06 | |
| PA CENTRAL | 17023569200 | 1743813 | FOUR STARS PIPE & SUPPLY RELOCATION | 561 | RELOCATE 190'-2" PMMP | 948 ROUTE 519 | 125 | EIG | 2017 | \$6,897.90 | \$10,741.05 | |
| PA SOUTH | 17023569500 | 1636288 | ARDARA IP TO MP | 557 | INSTALL 4,195'-2" & 4" PIP | ARDARA | 129 | ARD | 2017 | \$516,119.04 | \$802,788.78 | \$259,014.99 |
| PA SOUTH | 17023569700 | 1639192 | 2321 - ALLEN AVE - REPL JO | 559 | INSTALL 60'-4" PHHP | BRADFORD AL | 125 | DON | 2017 | \$34,299.10 | \$22,654.28 | \$1,043.94 |
| PA SOUTH | 17023569800 | 1743878 | 2321 - BROOKE - REPL JO | 557 | INSTALL 130'-2" PMLP | BROOKE ST | 051 | UNI | 2017 | \$13,862.14 | \$6,568.23 | \$1,034.88 |
| PA CENTRAL | 17023571300 | 1533375 | SOUTHERN BELTWAY SECT 55B RELOCATION | 561 | LAY 444'-4" PMLP | PROFIO RD | 125 | MCD | 2018 | \$45,473.00 | \$76,476.33 | \$1,155.00 |
| PA SOUTH | 17023571501 | 1642029 | NEW BRYSON REGULATOR | 559 | INSTALL 40'-4" PMMP | BRYSON BV | 051 | HOP | 2017 | \$52,016.73 | \$57,809.57 | \$2,793.00 |
| PA SOUTH | 17023571600 | 1744022 | | 559 | INSTALL 25'-2" PHHP | SIERRA DR | 129 | N H | 2017 | \$2,777.48 | \$2,444.55 | |
| PA CENTRAL | 17023572101 | 1744132 | WYLIE AVENUE REPLACEMENT PROJECT | 557 | LAY 580'-4" PMLP, 275'-2" PMLP | WYLIE | 125 | STR | 2017 | \$51,750.01 | \$93,663.35 | \$43,209.70 |
| PA SOUTH | 17023572800 | 1744206 | 2321 - DONORA - REPL JO | 557 | INSTALL 78'-2" PMMP | DONORA RD | 125 | DON | 2017 | \$5,567.95 | \$95.73 | \$0.00 |
| PA CENTRAL | 17023576300 | 1744596 | E BEAU ST REPLACEMENT PROJECT | 557 | LAY 190'-2" PMMP | E BEAU | 125 | WAS | 2017 | \$67,632.42 | \$124,339.54 | \$48,581.69 |
| PA SOUTH | 17023576500 | 1744598 | 2321 - GUN CLUB - REPL JO | 557 | INSTALL 2'-8", 12'-10" CS-HP | GUN CLUB RD | 051 | UNI | 2017 | \$51,314.18 | \$111,700.41 | \$5,426.53 |
| PA CENTRAL | 17023577100 | 1743644 | NORTH JEFFERSON REPLACEMENT PROJECT | 557 | INST 360'-2" PLP | LOCUST | 125 | CAN | 2017 | \$84,876.21 | \$31,116.11 | \$1,233.00 |
| PA SOUTH | 17023577500 | 1639192 | 2321 - ALLEN AVE - REPL JO | 557 | INSTALL FITTINGS ON LP SYSTEM | ALLEN ST | 125 | DON | 2017 | \$23,711.52 | \$19,036.50 | \$1,171.35 |
| PA CENTRAL | 17023578300 | 1744741 | MILLERS RUN RD EXT REPLACEMENT | 557 | LAY 400'-2" PMLP | MILLERS RUN | 003 | BRI | 2017 | \$55,944.71 | \$53,048.38 | \$19,305.72 |
| PA CENTRAL | 17023578600 | 1744763 | ROUTE 519 BETTERMENT PROJECT | 559 | LAY 25'-4" PMMP | HILL CHURCH HOUSTON | 125 | STR | 2017 | \$11,044.57 | \$10,608.68 | \$0.00 |
| PA SOUTH | 17023578800 | 1744229 | BLYTHE RD | 559 | INSTALL 325'-2" PMMP | BLYTHE RD | 125 | CHA | 2017 | \$26,252.13 | \$19,885.88 | \$11,484.00 |
| PA SOUTH | 17023579500 | 1744870 | MARS HILL RD - BRIDGE CROSSING | 559 | INSTALL 370'-4" PMMP | MARS HILL RD | 129 | RIL | 2017 | \$64,555.76 | \$46,997.10 | \$3,846.12 |
| PA SOUTH | 17023579700 | 1744887 | 2321 - BUTTERMILK HOLLOW - REPL JO | 557 | INSTALL 580'-4" PLP | BUTTERMILK HOLLOW | 129 | N H | 2017 | \$57,270.57 | \$72,077.52 | \$9,000.44 |
| PA SOUTH | 17023580100 | 1744889 | 2321 - LOCUST - REPL JO | 557 | INSTALL 1046'-4" PMMP | LOCUST LN | 125 | CHA | 2018 | \$157,696.55 | \$248,746.14 | \$31,682.31 |

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|------------|-------------|---------|---------------------------------------|-----|--------------------------------|---------------------|-----|-----|------|----------------|----------------|--------------|
| PA CENTRAL | 17023581001 | 1745042 | FRANKLIN DRIVE REPLACEMENT | 557 | INSTALL -3561'-4" PLP | FRANKLIN | 125 | MCM | 2018 | \$373,225.61 | \$434,046.03 | \$74,491.38 |
| PA CENTRAL | 17023581300 | 1528814 | PM - D-1581MORGANZA RD REPLACEMENT | 561 | PM - D-1581 MORGANZA RELOCATE | MORGANZA RD | 125 | CEC | 2017 | \$3,400,000.00 | \$3,353,488.66 | |
| PA SOUTH | 17023583200 | 1745299 | 2321 - AA ALY - REPL JO | 557 | INSTALL 3310'-2",4",6" PMMP | AA AL | 051 | UNI | 2018 | \$582,843.44 | \$574,518.92 | \$345,980.06 |
| PA SOUTH | 17023584300 | 1745386 | D-7090 PALMER RD | 557 | INSTALL 10,226'-8",10'-2"PMMP | D-7090 PALMER RD | 051 | ADA | 2019 | \$1,197,043.00 | \$1,342,237.55 | \$324,382.50 |
| PA SOUTH | 17023584501 | 1745410 | 2321 - BUTE RD - REPL JO | 557 | INST-3259'-4" & 2" PMMP PH1 | BUTE RD | 051 | UNI | 2019 | \$573,893.63 | \$774,787.24 | \$169,955.07 |
| PA SOUTH | 17023585000 | 1745410 | 2321 - BUTE RD - REPL JO | 557 | INST-5341'-4" & 2" PMMP PH1 | CENTER AV | 051 | UNI | 2018 | \$546,830.59 | \$487,324.15 | \$194,925.99 |
| PA SOUTH | 17023585600 | 1745549 | 2321 - CONRAD - REPL JO | 557 | INSTALL 1276'-2",4" PMMP | CONRAD AV | 125 | CHA | 2019 | \$285,613.44 | \$431,638.19 | \$246,586.36 |
| PA SOUTH | 17023586902 | 1533771 | 2321 - BROADWAY - REPL JO | 557 | INST. 4625' 6" 4" 2" PMLP | BROADWAY ST | 051 | BRO | 2019 | \$1,295,860.97 | \$1,331,926.91 | \$732,999.42 |
| PA SOUTH | 17023588100 | 1745666 | 2321 - WESTMORELAND - REPL JO | 557 | REPLACE 2" C-65093 | WESTMORELAND AV | 129 | N H | 2017 | \$21,588.26 | \$28,978.74 | |
| PA SOUTH | 17023589200 | 1745826 | 2321 - KENDALL - REPL JO | 557 | INSTALL - 407'-2" PMMP | KENDALL DR | 051 | UNI | 2018 | \$37,318.32 | \$30,170.02 | \$6,239.94 |
| PA CENTRAL | 17023589600 | 1745861 | AVELLA ROAD REPLACEMENT PROJECT | 557 | DB 510'-2" PMLP | AVELLA | 125 | AVE | 2018 | \$47,756.97 | \$68,438.07 | \$719.10 |
| PA SOUTH | 17023590001 | 1637097 | WORLD'S KITCHEN | 557 | INSTALL NEW GATE NEST | 8TH ST | 125 | CHA | 2017 | \$61,985.00 | \$53,458.38 | \$0.00 |
| PA SOUTH | 17023591000 | 1636311 | 2321 - HOPWOOD COOLSPRING - REPL JO | 557 | INSTALL 1230'-2" & 4" | BENNINGTON RD | 051 | HOP | 2018 | \$358,621.02 | \$389,481.47 | \$94,629.47 |
| PA CENTRAL | 17023592500 | 1742986 | TRANSCANADA ODORIZATION PROJECT | 559 | INSTALL -3505' PMP | SUNLEY RD | 125 | WAS | 2017 | \$274,004.99 | \$284,030.09 | \$14,756.27 |
| PA SOUTH | 17023592600 | 1746088 | 2321 - SUNSET - REPL JO | 557 | INSTALL 220' - 2" PMMP | SUNSET | 111 | SOM | 2017 | \$15,434.51 | \$14,733.69 | \$3,405.00 |
| PA SOUTH | 17023592800 | 1746091 | FLATWOODS RD-SR0201 | 559 | INST 440'-4"PM-LP | FLATWOODS RD | 051 | VAN | 2018 | \$34,610.70 | \$52,701.80 | \$992.00 |
| PA CENTRAL | 17023593000 | 1746189 | TIMBERCREST DRIVE BETTERMENT PROJECT | 559 | LAY 185'-2"PMMP | TIMBERCREST DR | 125 | CEC | 2017 | \$19,917.01 | \$33,215.10 | \$5,571.76 |
| PA SOUTH | 17023597301 | 1746322 | 2321 - FOURTH - REPL JO | 557 | INSTALL 2,213'-6"/4"/2" PMMP | FOURTH | 129 | JEA | 2019 | \$650,520.49 | \$664,116.95 | \$200,073.91 |
| PA SOUTH | 17023600201 | 1746477 | 2321 - CHESTNUT - REPL JO | 557 | INSTALL 3,624'-4" & 2" PMLP | CHESTNUT | 125 | DON | 2019 | \$585,839.27 | \$911,642.72 | \$517,349.47 |
| PA SOUTH | 17023600400 | 1746477 | 2321 - CHESTNUT - REPL JO | 557 | INSTALL 1593'- 2" PMLP | CHESTNUT ST | 125 | DON | 2019 | \$307,476.17 | \$376,252.83 | \$261,999.65 |
| PA SOUTH | 17023600900 | 1746481 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 1,765'-2" & 4" PMLP | JEFFERSON ST | 125 | ALL | 2018 | \$300,276.55 | \$431,230.79 | \$274,557.98 |
| PA SOUTH | 17023601100 | 1746481 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 1025'-2" PMMP | WALNUT ST | 125 | ALL | 2018 | \$121,663.99 | \$107,019.57 | \$53,621.51 |
| PA SOUTH | 17023601300 | 1746481 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 990'-2" PMMP | ELM ST | 125 | STO | 2018 | \$117,612.52 | \$117,685.30 | \$27,659.55 |
| PA SOUTH | 17023601500 | 1746481 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 5,280 - 2" & 4" PMMP | FURLONG ST | 125 | ROS | 2018 | \$823,856.97 | \$898,403.74 | \$792,335.71 |
| PA SOUTH | 17023601701 | 1636265 | HIGHLAND AVE - PENN / HEMPFIELD | 557 | INSTALL 1,048'-4" PLP | HIGHLAND AV | 129 | PEN | 2019 | \$210,716.99 | \$269,733.13 | \$107,431.19 |
| PA SOUTH | 17023601901 | 1746500 | 2321 - OLD ROUTE 40 - REPL JO | 557 | INSTALL 4,603'-6", 4", 2" PMMP | OLD ROUTE 40 | 051 | BRO | 2019 | \$834,548.26 | \$956,247.19 | \$324,526.47 |
| PA SOUTH | 17023602101 | 1746500 | 2321 - OLD ROUTE 40 - REPL JO | 557 | INSTALL 2,395'-2" & 6" PMMP | CENTER | 051 | BRO | 2019 | \$593,607.96 | \$552,530.67 | \$117,963.15 |
| PA SOUTH | 17023603200 | | | 559 | INSTALL 135'-2" PLP | POPLAR ST | 129 | IRW | 2017 | \$13,283.06 | \$8,594.75 | \$1,261.72 |
| PA SOUTH | 17023603400 | 1746575 | 2321 - GLADE RUN - REPL JO | 557 | INSTALL 560'-4" PMMP PH1 | GLADE RUN RD | 059 | CAR | 2018 | \$98,954.66 | \$97,933.57 | \$43,210.22 |
| PA SOUTH | 17023604100 | 1746575 | 2321 - GLADE RUN - REPL JO | 557 | INSTALL 3316'-4" PMMP PH2 | GLADE RUN RD | 069 | CAR | 2018 | \$310,438.55 | \$266,369.17 | \$13,922.51 |
| PA SOUTH | 17023604300 | 1746575 | 2321 - GLADE RUN - REPL JO | 557 | INSTALL 1610'-4" PMMP PH3 | GLADE RUN RD | 059 | CAR | 2018 | \$137,191.95 | \$141,677.91 | \$4,338.60 |
| PA SOUTH | 17023604700 | 1746711 | STEWART EXTENSION | 559 | INSTALL 146'-2" PMLP | STEWART ST | 051 | SMI | 2017 | \$16,591.09 | \$3,841.00 | \$0.00 |
| PA CENTRAL | 17023607700 | 1746797 | SMITHFIELD AV REPLACEMENT PROJECT | 557 | LAY 2490'-2"PMMP | SMITHFIELD | 125 | CAN | 2018 | \$585,538.28 | \$551,317.88 | \$238,256.76 |
| PA SOUTH | 17023607900 | 1745410 | 2321 - BUTE RD - REPL JO | 557 | INSTALL 4" SS | MT VIEW ST | 051 | UNI | 2018 | \$4,375.12 | \$33,443.61 | \$361.20 |
| PA SOUTH | 17023609100 | 1636188 | WATER ST. PROJECT | 557 | INSTALL FITTINGS ON LP MAIN | ANGLE ST | 051 | BRO | 2017 | \$17,747.14 | \$826.70 | |
| PA SOUTH | 17023610101 | 1746969 | 2321 - CLAY - REPL JO | 557 | INSTALL 8,900' 2"/4"/8" PHHP | CLAY | 129 | N H | 2019 | \$2,070,337.94 | \$2,012,793.69 | \$668,400.68 |
| PA SOUTH | 17023610500 | 1746985 | 2321 - BLYTHE - REPL JO | 557 | INSTALL 440'-6" PMLP | BLYTHE AL | 125 | CHA | 2018 | \$138,467.24 | \$178,844.89 | \$47,784.50 |
| PA CENTRAL | 17023610900 | 1747014 | MOORE RD REPLACEMENT | 557 | INSTALL 450'-4" PMMP | MOORE RD | 125 | WAS | 2017 | \$75,114.18 | \$88,421.88 | \$13,069.62 |
| PA SOUTH | 17023613600 | 1636257 | FAYETTE ST / MORGANTOWN ST | 559 | INSTALL WMSN - LP SYSTEM | MORGANTOWN ST | 051 | UNI | 2017 | \$29,856.84 | \$26,958.07 | \$164.40 |
| PA CENTRAL | 17023613900 | 1747287 | PINE ALLEY BETTERMENT PROJECT | 557 | LAY 310'-4"PMLP | PINE AL | 125 | HOU | 2018 | \$64,310.41 | \$51,090.77 | \$18,030.68 |
| PA CENTRAL | 17023614700 | 1747310 | STRAWBERRY REPLACEMENT PROJECT | 557 | INSTALL 794'-4" P | STRAWBERRY | 125 | WAS | 2019 | \$156,496.74 | \$205,568.94 | \$146,302.52 |
| PA SOUTH | 17023614900 | 1744227 | PERRY BORO | 557 | INST. 3879'-2"/4" PMMP | CONSTITUTION ST | 051 | PER | 2018 | \$489,055.10 | \$485,087.71 | \$206,926.47 |
| PA SOUTH | 17023615100 | 1744227 | PERRY BORO | 557 | INST 1904'-2"/4" PMLP | CONSTITUTION ST | 051 | PER | 2019 | \$240,421.39 | \$522,115.97 | \$37,191.13 |
| PA CENTRAL | 17023615300 | 1747321 | BEBOUT ROAD REPLACEMENT PROJECT | 557 | LAY 1215'-4"PMMP | BEBOUT | 125 | VEN | 2019 | \$181,688.03 | \$297,874.97 | \$52,371.47 |
| PA SOUTH | 17023616400 | 1640590 | 2321 - CREST - REPL JO | 557 | INST 1471'-2"/4" PMMP | CREST AV | 125 | CHA | 2018 | \$397,406.22 | \$626,111.74 | \$315,732.49 |
| PA SOUTH | 17023616900 | 1747485 | 2321 - QUEEN ST - REPL JO | 557 | INSTALL 2'-3"PM-LP, 6'-2"PM-LP | QUEEN ST | 051 | CON | 2017 | \$6,657.18 | \$3,632.17 | \$1,625.40 |
| PA CENTRAL | 17023618100 | 1747659 | SCHENLEY DRIVE REPLACEMENT PROJECT | 557 | DB 340'-2"PMMP | SCHENLEY | 125 | MCM | 2019 | \$31,541.75 | \$26,804.09 | \$5,482.95 |
| PA SOUTH | 17023618700 | 1747673 | 2321 - REDSTONE FURNACE RD - REPL JO | 557 | INSTALL - 5,261'-4" & 2" PMMP | REDSTONE FURNACE RD | 051 | HOP | 2019 | \$835,530.27 | \$846,236.18 | \$370,845.20 |
| PA CENTRAL | 17023619700 | 1747752 | LEMOYNE AVENUE EXT BETTERMENT PROJECT | 559 | LAY 360'-4"PMMP | LEMOYNE AV EXT | 125 | WAS | 2017 | \$60,479.09 | \$36,423.93 | \$6,939.03 |
| PA CENTRAL | 17023620600 | 1747783 | THOMPSONVILLE REPLACEMENT PROJECT | 557 | LAY 20'-4" PMLP | THOMPSONVILLE | 125 | MCM | 2017 | \$21,681.79 | \$21,769.78 | \$3,461.72 |
| PA SOUTH | 17023622100 | 1747923 | MULBERRY ST CULVERT | 561 | INSTALL 150'-4"PM-MP,4"PV | MULBERRY ST | 051 | HOP | 2017 | \$23,512.59 | \$5,057.09 | \$0.00 |
| PA CENTRAL | 17023622600 | 1747989 | ROLLING OAKS REPLACEMENT PROJECT | 557 | LAY 100'-2"PMMP | ROLLING OAKS | 125 | WAS | 2017 | \$6,290.58 | \$541.05 | |
| PA CENTRAL | 17023623500 | 1747193 | D-36 PHASE 2 REPLACEMENT PROJECT | 557 | INSTALL 4,757'-6"/4"/2" PMMP | WASHINGTON RD | 125 | MCM | 2019 | \$848,650.93 | \$926,360.13 | \$310,320.48 |
| PA SOUTH | 17023623800 | 1748060 | SR 281 - LOWER MAIN | 559 | INSTALL 40'-2" PMMP | | 111 | SOM | 2018 | \$6,827.22 | \$8,827.44 | |
| PA CENTRAL | 17023626700 | 1748249 | CANDOR ROAD BRIDGE RELOCATION | 561 | INSTALL 670'-4" PMMP | CANDOR RD | 125 | BUL | 2018 | \$139,437.93 | \$159,401.09 | \$0.00 |
| PA SOUTH | 17023627700 | 1743874 | 3514 & 3521 MORGANTOWN RD | 559 | INSTALL 465'-4" PM-LP | 3521 MORGANTOWN RD | 051 | SMI | 2017 | \$32,036.65 | \$1,252.22 | \$0.00 |
| PA CENTRAL | 17023628001 | 1533405 | ROBINSON HIGHWAY TURNPIKE RELOCATION | 561 | INSTALL 4,485'-6" PMMP | ROBINSON HY | 125 | MCD | 2018 | \$594,229.22 | \$707,776.64 | \$1,365.00 |
| PA CENTRAL | 17023628101 | 1533405 | ROBINSON HIGHWAY TURNPIKE RELOCATION | 561 | INSTALL 4,985'-6"/50'-2" PMMP | ROBINSON HY | 125 | MCD | 2018 | \$883,720.98 | \$1,165,367.26 | \$181,101.74 |

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| PA SOUTH | 17023628800 | 1636311 | 2321 - HOPWOOD COOLSPRING - REPL JO | 557 | INSTALL 2", 3", 4" AND 6" SS | BENNINGTON RD | 051 | UNI | 2018 | \$28,193.30 | \$80,462.19 | |
| PA SOUTH | 17023630001 | 1748423 | 2321 - JULIA - REPL JO | 557 | INSTALL 7764'-6", 4", 2" PMMP | 145 JULIA ST | 059 | RIC | 2018 | \$1,344,533.83 | \$1,203,340.60 | \$172,299.53 |
| PA SOUTH | 17023630200 | 1425625 | PM - KEYSTONE LIME POD | 559 | PM - KEYSTONE LIME OUTLET | 1484 ZEHRER RD | 111 | SAL | 2017 | \$0.00 | \$0.00 | |
| PA SOUTH | 17023631001 | 1748483 | 2321 - OLINGER - REPL JO | 557 | INSTALL 430'-2" PMLP | OLINGER ST | 111 | MEY | 2018 | \$73,379.07 | \$67,494.68 | \$2,315.52 |
| PA SOUTH | 17023632800 | 1746481 | 2321 - JEFFERSON - REPL JO | 557 | INSTALL 230'-4" PMMP | RAILROAD ST | 125 | STO | 2018 | \$90,219.41 | \$68,347.12 | \$1,683.48 |
| PA SOUTH | 17023633000 | 1748717 | 2321 - STAUFFER - REPL JO | 557 | INSTALL - 170'-2" PMLP | STAUFFER AV | 129 | SCO | 2018 | \$15,397.52 | \$12,120.70 | \$3,114.84 |
| PA SOUTH | 17023635600 | 1745299 | 2321 - AA ALY - REPL JO | 557 | INSTALL FITTINGS FOR LP ABN | AA AL | 051 | UNI | 2018 | \$16,921.93 | \$17,989.22 | \$1,125.60 |
| PA SOUTH | 17023637200 | 1853196 | AIRPORT RD RELOCATION | 561 | INSTALL - 400'-2" PMMP | AIRPORT RD | 051 | CON | 2019 | \$67,843.87 | \$14,265.44 | \$0.00 |
| PA SOUTH | 17023638000 | 1749098 | 2321 - CENTER - REPL JO | 557 | INSTALL 3,550'-2" & 4" PMMP | S CENTER AV | 111 | SOM | 2018 | \$619,992.27 | \$446,898.35 | \$165,806.64 |
| PA CENTRAL | 17023638201 | 1636405 | PM - D-1581 BAKER RD REPLACEMENT | 559 | PM - FAWCETT CHURCH FIRE VLV | 346 FAWCETT CHURCH RD | 125 | CEC | 2018 | \$33,214.00 | \$49,658.97 | |
| PA SOUTH | 17023639401 | 1749251 | CRAFTMOORE RD EXTENSION | 559 | INSTALL 1000'-2" PMMP | CRAFTMOORE RD | 051 | BRO | 2017 | \$63,439.18 | \$60,774.77 | \$12,186.18 |
| PA SOUTH | 17023640300 | 1749233 | 2321 - OLIVER TWO - REPL JO | 557 | INST 1094'-2" & 934'-4" PMMP | OLIVER TWO RD | 051 | UNI | 2019 | \$238,845.68 | \$258,934.12 | \$86,828.03 |
| PA CENTRAL | 17023641300 | 1749345 | ROBINSON RUN RD BETTERMENT | 559 | 80' 4" PMP | ROBINSON RUN RD | 003 | MCD | 2018 | \$63,569.41 | \$54,906.04 | \$0.00 |
| PA CENTRAL | 17023642500 | 1742886 | LENORE WAY REPLACEMENT | 559 | INSTALL 70'-2" PMMP | SUNSET DR | 125 | MCM | 2017 | \$8,014.24 | \$7,033.08 | |
| PA CENTRAL | 17023642800 | 1749519 | NORTH STREET REPLACEMENT PROJECT | 557 | LAY 380'-6"PMLP, 355'-2"PMLP | NORTH | 059 | WAY | 2019 | \$99,183.07 | \$273,319.55 | \$68,290.13 |
| PA SOUTH | 17023643000 | 1749535 | GILMORE AVE | 559 | INSTALL 5'-3" PMLP | GILMORE AV | 051 | MAS | 2018 | \$7,739.97 | \$4,694.92 | \$0.00 |
| PA EAST | 17024420200 | 1207992 | CODORUS FURNACE RD REPLACEMENT PROJECT | 557 | INST 90'-4"PMMP | N SHERMAN ST | 133 | MT | 2017 | \$32,118.90 | \$64,509.40 | \$4,504.26 |
| PA EAST | 17024424801 | 1742833 | 2421 - ATLANTIC - REPL JO | 557 | INSTALL 1320'-4" & 6" PLP | ATLANTIC | 133 | YOR | 2019 | \$530,846.86 | \$604,003.71 | \$286,375.71 |
| PA EAST | 17024425100 | 1742856 | 2421 - SOLOMON - REPL JO | 557 | REPLACE 640'-2" PMMP | SOLOMON | 001 | GET | 2017 | \$30,269.51 | \$27,209.48 | |
| PA EAST | 17024425901 | 1742919 | N OXFORD AVE | 557 | INSTALL -773'-4",6" PLP | OXFORD AV | 001 | MCS | 2019 | \$332,476.77 | \$327,829.71 | \$63,936.00 |
| PA EAST | 17024426300 | 1742978 | LONGSTOWN ROAD | 559 | OC - -70'-2" PMMP | LONGSTOWN ROAD | 133 | YOR | 2017 | \$21,560.40 | \$4,591.41 | \$1,643.04 |
| PA EAST | 17024427000 | 1743101 | WARING / IRVIN | 557 | WARING AND IRVIN REPLACEMENT | WARING/IRVIN | 027 | STA | 2019 | \$165,745.61 | \$295,713.87 | \$156,569.21 |
| PA EAST | 17024427701 | 1743153 | 2421 - MUMMASBURG - REPL JO | 557 | INSTALL 380'-2" PMMP | MUMMASBURG RD | 001 | GET | 2018 | \$76,109.12 | \$114,128.76 | \$4,001.85 |
| PA EAST | 17024429300 | 1743289 | S GARNER | 557 | INSTALL -415'-2" PMMP | S GARNER | 027 | STA | 2018 | \$43,993.13 | \$53,872.51 | \$28,242.32 |
| PA EAST | 17024429500 | 1743290 | EASEMENT E | 557 | REPLACE MAIN - LEAKAGE | EASEMENT E | 027 | STA | 2018 | \$53,779.88 | \$67,077.96 | \$14,501.20 |
| PA EAST | 17024430400 | 1743375 | 2421 - GLENDALE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | GLENDALE RD | 133 | YOR | 2017 | \$119,628.21 | \$183,733.91 | \$174,474.26 |
| PA EAST | 17024430900 | 1743385 | 2421 - HOLLYWOOD - REPL JO | 557 | REPLACE MAIN - LEAKAGE | HOLLYWOOD | 133 | YOR | 2017 | \$233,117.03 | \$314,486.53 | \$122,727.24 |
| PA EAST | 17024432600 | 1743617 | SHOEMAKER RELOCATE | 561 | INSTALL -60'-2" PMMP | SHOEMAKER DR | 001 | NOX | 2017 | \$6,010.52 | \$2,972.62 | |
| PA EAST | 17024434300 | 1743849 | W CHESTNUT ST | 557 | INSTALL 605'-6" PLP | W CHESTNUT ST | 133 | HAN | 2018 | \$122,537.60 | \$193,030.70 | \$190,952.69 |
| PA EAST | 17024434600 | 1743916 | STATE STREET CI MARKET TO WALLACE | 557 | INSTALL -712'-2" PMMP | N STATE | 133 | YOR | 2018 | \$135,384.96 | \$205,834.88 | \$121,374.74 |
| PA EAST | 17024435001 | 1743976 | CARL PIKE | 557 | INSTALL -1340'-2" AND 6" PMMP | CARLISLE | 001 | NEW | 2018 | \$170,923.30 | \$214,681.73 | \$1,262.10 |
| PA EAST | 17024435200 | 1743982 | VICTOR AVE | 557 | INST 1160'-2" PMMP | VICTOR | 001 | GET | 2018 | \$131,295.05 | \$129,327.86 | \$78,685.91 |
| PA EAST | 17024435500 | 1744001 | ROOSEVELT CORROSION SHORT | 559 | INSTALL -787'-2" PMMP | 1120 ROOSEVELT | 133 | YOR | 2017 | \$148,971.52 | \$138,020.56 | \$76,780.20 |
| PA EAST | 17024436200 | 1744064 | 2421 - JACKSON - REPL JO | 557 | INSTALL 444'-4" PMMP | E JACKSON ST | 133 | YOR | 2017 | \$99,497.57 | \$149,398.44 | \$104,479.39 |
| PA EAST | 17024436401 | 1744072 | HIGH ST, ARENDTSTVILLE | 557 | INST 2,295'-4" PMP | N HIGH | 001 | ARE | 2018 | \$478,760.36 | \$491,594.27 | \$23,974.40 |
| PA EAST | 17024437201 | 1639540 | 2421 - CLINTON - REPL JO | 557 | INST 3415'-2"PMMP | N CLINTON ST | 133 | YOR | 2018 | \$945,490.01 | \$1,220,259.60 | \$1,167,603.02 |
| PA EAST | 17024437700 | 1744239 | BRETHERN BRIDGEWATER PH 4,5,6 | 561 | INSTALL 4" SS FOR RELOCATION | BRICKYARD RD | 001 | NEW | 2018 | \$3,868.79 | \$5,744.11 | |
| PA EAST | 17024439900 | 1744560 | CURTIN RD STEAM VAULT | 561 | TEMP REMOVE -20'-2" CSMP | CURTIN RD | 027 | STA | 2017 | \$5,988.47 | \$5,779.24 | |
| PA EAST | 17024442200 | 1744689 | 2451 - CATO - REPL JO | 557 | INSTALL -30'-2" PMMP | CATO | 027 | STA | 2017 | \$7,388.52 | \$4,739.18 | \$360.00 |
| PA EAST | 17024442500 | 1744827 | BARLOW ST | 559 | INST 90'-2" PMLP | BARLOW ST | 001 | GET | 2017 | \$4,936.28 | \$11,570.70 | |
| PA EAST | 17024444201 | 1744900 | 2421 - CENTENNIAL - REPL JO | 557 | INSTALL -470'-2" PMMP | CENTENNIAL | 133 | HAN | 2018 | \$98,551.85 | \$147,248.70 | \$132,946.97 |
| PA EAST | 17024444500 | 1744921 | PENN STATE TRASH COMPACTOR | 561 | RELOCATE FOR PSU DUMPSTER | SNYDER HALL | 027 | UNI | 2017 | \$4,847.49 | \$11,155.08 | |
| PA EAST | 17024444700 | 1638090 | Apple Retail Properties | 561 | RELOCATE -210'-2" PMMP | 100 EISENHOWER DR | 133 | HAN | 2017 | \$2,761.08 | \$3,817.37 | |
| PA EAST | 17024445001 | 1744901 | NORTH ST REPLACEMENT | 557 | INST 3,045'-2",4",6" PMMP | NORTH | 133 | HAN | 2019 | \$966,694.50 | \$1,103,886.57 | \$422,216.34 |
| PA EAST | 17024445901 | 1746947 | PENNDOT VALLEY ST BRIDGE | 561 | VALLEY ST BRIDGE - PH1 | | 133 | GLE | 2018 | \$113,085.35 | \$146,755.93 | \$0.00 |
| PA EAST | 17024446000 | 1745043 | ELICKER'S STANTON ST | 557 | INST 2898'-2"PMMP | STANTON ST | 133 | YOR | 2019 | \$752,780.13 | \$706,435.58 | \$637,874.60 |
| PA EAST | 17024446300 | 1745045 | HAY ST - CI | 557 | INSTALL 2191'-2"PMMP | HAY ST | 133 | YOR | 2018 | \$412,001.46 | \$921,884.10 | \$585,112.92 |
| PA EAST | 17024446500 | 1745050 | E SOUTH ST - CI | 557 | INSTALL 1440'-2"PMMP | E SOUTH ST | 133 | YOR | 2018 | \$403,084.43 | \$413,709.70 | \$243,492.12 |
| PA EAST | 17024446802 | 1745057 | E KING ST PROJECT | 557 | INST 3939'-8"PMMP, 428'-6"CSMP | E KING ST | 133 | YOR | 2019 | \$1,602,143.42 | \$1,849,195.29 | \$1,195,116.49 |
| PA EAST | 17024447001 | 1745059 | 3300 CARLISLE RD REPLACEMENT | 557 | INSTALL 1860'-4"PMMP | 3300 CARLISLE RD | 133 | DOV | 2018 | \$489,161.49 | \$629,266.36 | \$425,879.03 |
| PA EAST | 17024450501 | 1745724 | RAILROAD LANE | 559 | EXTEND 70'-2" CS REPLACE SPLIT | N RAILROAD LN | 133 | RED | 2017 | \$10,460.51 | \$9,398.99 | \$1,643.04 |
| PA EAST | 17024452400 | 1745805 | 2421 - LEMON - REPL JO | 557 | REPLACE MAIN - LEAKAGE | LEMON ST | 133 | WRI | 2019 | \$230,092.76 | \$532,194.37 | \$466,269.40 |
| PA EAST | 17024453100 | 1745835 | REDCO RELO | 561 | RELOCATE 175' OF PMMP | | 133 | RED | 2018 | \$7,437.45 | \$9,516.03 | |
| PA EAST | 17024453800 | 1746034 | MILL CREEK RELOCATE | 561 | RELOCATE -289'-4" PMMP | 1365 MILL CREEK RD | 133 | YOR | 2017 | \$20,588.50 | \$25,643.08 | \$1,361.76 |
| PA EAST | 17024456400 | 1746277 | 2000 CARLISLE RD REPLACEMENT | 557 | INST 1481'-6" & 740'-2" PMMP | 2000 CARLISLE RD | 133 | YOR | 2018 | \$550,830.71 | \$767,202.22 | \$505,881.88 |
| PA EAST | 17024456601 | 1746278 | 2421 - FIFTH - REPL JO | 557 | INST 565'-6"PLP & 315'-4"PLP | FIFTH AV | 133 | YOR | 2019 | \$248,042.63 | \$435,531.81 | \$202,794.85 |
| PA EAST | 17024456800 | 1746279 | 2421 - SIXTH - REPL JO | 557 | INST 60'-2" P-LP | SIXTH | 133 | YOR | 2018 | \$38,197.99 | \$88,115.19 | \$48,906.47 |
| PA EAST | 17024457001 | 1746314 | W HANOVER ST. | 557 | INSTALL -3822'-2",4",6" P | W HANOVER ST | 133 | HAN | 2019 | \$966,194.73 | \$1,074,045.41 | \$676,605.89 |

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|------------|-------------|---------|--|-----|--------------------------------|-----------------------|-----|-----|------|----------------|----------------|--------------|
| PA EAST | 17024457701 | 1746382 | MONROE ST HANOVER | 557 | INSTALL -2,400'-4" PLP | 4TH | 133 | HAN | 2019 | \$718,591.40 | \$918,211.78 | \$671,860.46 |
| PA EAST | 17024458800 | 1746442 | CAMP BETTY WASH RELO | 561 | INSTALL -180'-8" PMMP | CAMP BETTY WASHINGTON | 133 | YOR | 2017 | \$40,335.37 | \$49,589.92 | \$1,881.60 |
| PA EAST | 17024460701 | 1641043 | PM - SOUTH YORK POD - REPLACEMENT | 557 | REPLACE MAIN - LEAKAGE | PARLETT RD | 133 | DEL | 2019 | \$369,523.70 | \$422,743.27 | \$20,713.14 |
| PA EAST | 17024461000 | 1746648 | HELLAM RD | 559 | INST 370'-2"PMMP BETTERMENT | 410 GARDEN AVE | 133 | WRI | 2017 | \$49,550.91 | \$41,966.58 | \$13,750.67 |
| PA EAST | 17024461601 | 1746683 | S ADAMS ST PH 1 & 2 | 557 | INST 1885'-2", 268'-8", 138'-6 | W KING ST | 133 | YOR | 2018 | \$750,532.25 | \$769,255.87 | \$360,977.47 |
| PA EAST | 17024461800 | 1746683 | S ADAMS ST PH 1 & 2 | 557 | INST 3022'-2"PMMP | W POPLAR ST | 133 | YOR | 2018 | \$695,860.44 | \$612,823.79 | \$589,354.32 |
| PA EAST | 17024462000 | 1746685 | W PRINCESS ST - S ADAMS ST PH 3 | 557 | INST 2742'-2"PMMP | W PRINCESS ST | 133 | YOR | 2019 | \$463,065.55 | \$486,547.05 | \$206,281.69 |
| PA EAST | 17024463501 | 1746836 | REDCO ABANDONMENT | 559 | INSTALL 4" SS | REDCO DR | 133 | RED | 2017 | \$9,289.91 | \$8,894.85 | |
| PA EAST | 17024463700 | 1746836 | REDCO ABANDONMENT | 559 | INSTALL 4" SS HP ABDN | REDCO DR | 133 | RED | 2017 | \$5,256.21 | \$2,630.05 | |
| PA EAST | 17024465500 | 1747358 | CAPE HORN RD BETTERMENT | 559 | INST -1,500'-4" PMMP | CAPE HORN RD | 133 | RED | 2018 | \$186,485.70 | \$177,456.57 | \$27,772.03 |
| PA EAST | 17024465700 | 1747257 | 2421 - MT AIRY - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 13629 MT AIRY RD | 133 | NFR | 2017 | \$6,534.42 | \$6,712.21 | \$2,791.36 |
| PA EAST | 17024465901 | 1747263 | DEWEY ST | 557 | INSTALL -940'-2" PMMP | 3RD | 133 | MT | 2018 | \$208,267.26 | \$296,449.71 | \$287,503.94 |
| PA EAST | 17024467600 | 1747377 | 2421 - EDGEWOOD - REPL JO | 557 | INSTALL -805'-2" PMMP | EDGEWOOD | 133 | YOR | 2018 | \$150,251.67 | \$238,639.56 | \$91,328.01 |
| PA EAST | 17024467900 | 1747410 | 2421 - RIDGE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | RIDGE AV | 133 | YOR | 2018 | \$180,687.26 | \$188,064.39 | \$197,984.10 |
| PA EAST | 17024468600 | 1747464 | PARK ST BETTERMENT | 559 | INSTALL 155'-2" PMMP | PARK ST | 133 | SEV | 2018 | \$8,868.27 | \$15,820.05 | \$1,036.64 |
| PA EAST | 17024470200 | 1746796 | 2421 - BREWSTER - REPL JO | 557 | INSTALL -5,230'-2" PMMP | BREWSTER | 133 | HAN | 2018 | \$660,520.00 | \$737,112.34 | \$203,913.62 |
| PA EAST | 17024471201 | 1747708 | 2421 - GEISELMAN - REPL JO | 557 | REPLACE MAIN - LEAKAGE | GEISELMAN DR | 133 | JAC | 2018 | \$67,521.21 | \$84,744.47 | \$8,112.98 |
| PA EAST | 17024472001 | 1747913 | PENNDOT SR 3054 REPLACE | 557 | INST 2093'-8";1236'-2" PMMP | S GEORGE | 133 | YOR | 2019 | \$936,384.33 | \$2,030,304.77 | \$76,857.82 |
| PA EAST | 17024476100 | 1748212 | SUMMIT | 557 | INSTALL -840'-6" PMMP | SUMMIT | 027 | STA | 2018 | \$73,276.89 | \$93,749.16 | \$28,039.28 |
| PA EAST | 17024477000 | 1534793 | SUSQUEHANNA TRAIL | 557 | INSTALL -1100'-8&2" PMMP | MAIN | 133 | SHR | 2018 | \$202,841.33 | \$581,715.25 | \$61,624.68 |
| PA EAST | 17024477900 | 1748330 | LESTER AND PINE SPRINGS | 557 | REPLACE MAIN - LEAKAGE | LESTER AV | 133 | YOR | 2019 | \$15,366.75 | \$40,345.13 | \$782.25 |
| PA EAST | 17024482700 | 1748936 | 2421 - PRESCOTT - REPL JO | 557 | REPLACE MAIN - LEAKAGE | PRESCOTT DR | 133 | YOR | 2019 | \$108,565.49 | \$99,033.13 | \$45,707.63 |
| PA EAST | 17024483000 | 1640112 | PM - AXEMANN POD REPLACEMENT | 559 | PM - D-10132 REPLACEMENT | AXEMANN RD | 027 | BEL | 2018 | \$3,070,395.00 | \$2,452,821.06 | \$330,936.63 |
| PA EAST | 17024483300 | 1640112 | PM - AXEMANN POD REPLACEMENT | 559 | PM - GRANDSLAM DR ABANDONMENT | GRAND SLAM DR | 027 | BEL | 2018 | \$0.00 | \$69,142.05 | |
| PA EAST | 17024483600 | 1531769 | SNOWSHOE | 559 | PM - SNOWSHOE POD SEPERATION | | 027 | CLA | 2018 | \$0.00 | \$8,838.69 | |
| PA EAST | 17024484000 | 1749484 | N SHERMAN ST CRITICAL VALVE | 559 | INSTALL CRITICAL VALVE | N SHERMAN ST | 133 | MAN | 2019 | \$17,697.30 | \$36,531.82 | \$2,283.75 |
| PA EAST | 17024484600 | 1748982 | 2421 - MAIN - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MAIN-BRIDGE | 133 | GLE | 2019 | \$123,147.96 | \$201,431.05 | \$85,790.96 |
| PA EAST | 17024484900 | 1748991 | 2421 - GRANTLEY - REPL JO | 557 | REPLACE MAIN - LEAKAGE | GRANTLEY RD | 133 | YOR | 2019 | \$183,679.29 | \$355,857.35 | \$88,177.48 |
| PA EAST | 17024485100 | 1748995 | 2421 - STONE RIDGE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | STONE RIDGE RD | 133 | YOR | 2019 | \$608,760.12 | \$843,954.75 | \$380,904.05 |
| PA EAST | 17024485500 | 1749024 | 2421 - CHESTNUT - REPL JO | 557 | INSTALL 703'-2" PMMP | CHESTNUT ST | 133 | YOR | 2018 | \$255,908.17 | \$515,402.29 | \$359,521.30 |
| PA EAST | 17024485700 | 1749081 | WALNUT & STATE CI REPLACEMENT | 557 | REPLACE 930'-2" PMMP | WALNUT ST | 133 | YOR | 2018 | \$337,757.87 | \$292,458.15 | \$189,051.56 |
| PA EAST | 17024487600 | 1749237 | F ALLEY | 557 | INSTALL 1953'-2",4" PMMP | F | 027 | STA | 2018 | \$299,681.77 | \$742,519.37 | \$647,723.89 |
| PA EAST | 17024488000 | 1749244 | LOCUST ST | 561 | OC - INSTALL 1417'-2" PMMP | LOCUST ST | 133 | OC | 2019 | \$239,140.20 | \$358,626.84 | \$105,963.22 |
| PA EAST | 17024488600 | 1749253 | CONSTITUTION AVE | 561 | OC - INSTALL 2300'-4"PMMP | CONSTITUTION AVE | 133 | NFR | 2019 | \$323,749.74 | \$830,069.15 | \$452,086.01 |
| PA EAST | 17024489600 | 1851046 | CLARENCE & FLATT | 559 | BETTERMENT FOR SERVICES | CLARENCE RD | 027 | SNO | 2018 | \$128,607.00 | \$166,118.23 | \$61,160.11 |
| PA EAST | 17024489800 | 1640880 | KNOLL LANE | 557 | INST -3340'-2"&4" PMMP | KNOLL PH 1 | 133 | YOR | 2019 | \$310,567.30 | \$524,550.02 | \$182,308.49 |
| PA EAST | 17024490600 | 1637402 | FAIRFIELD PENNDOT REPLACEMENT | 557 | INSTALL 30'- PMMP | FAIRFIELD | 001 | FAI | 2017 | \$885.60 | \$856.66 | |
| PA EAST | 17024491300 | 1749619 | HARRISON RD | 557 | HARRISON RD | HARRISON RD | 027 | PLE | 2018 | \$245,802.55 | \$135,347.50 | \$14,306.01 |
| PA EAST | 18021419900 | 1850179 | SHERWOOD DRIVE REPLACEMENT (ALDYL-A) | 557 | REPLACE 1045'-2" PMMP | SHERWOOD DR | 065 | CHA | 2018 | \$98,927.99 | \$89,603.27 | \$36,225.91 |
| PA EAST | 18021420100 | 1850180 | 1695 LINCOLN WAY E REPLACEMENT | 557 | REPLACE 1490'-2" PMMP | 1695 LINCOLN WAY E | 055 | CHA | 2018 | \$113,578.79 | \$110,517.38 | \$33,473.20 |
| PA EAST | 18021420300 | 1850187 | 1712 LINCOLN WAY REPLACEMENT (ALDYL-A) | 557 | REPLACE 950'-2" PMMP | 1712 LINCOLN WAY E | 055 | CHA | 2018 | \$117,428.78 | \$229,390.59 | \$149,902.27 |
| PA EAST | 18021420500 | 1850225 | LINCOLN HWY E HP LINE | 557 | INSTALL 2 4" SS | LINCOLN | 055 | FAY | 2018 | \$5,946.47 | \$107.30 | |
| PA EAST | 18021421200 | 1850433 | 2171 - ALANDALE - REPL JO | 557 | INST SS TO ABN MAIN LEAK VALVE | ALANDALE | 055 | CHA | 2018 | \$4,648.14 | \$350.52 | |
| PA EAST | 18021421600 | 1850531 | 1385 HILLENDALE DR | 557 | REPLACE 20'-2" CSMP | 1385 HILLENDALE DR | 055 | CHA | 2018 | \$5,791.63 | \$8,181.74 | |
| PA EAST | 18021421800 | 1850532 | HILLVIEW LEAKAGE | 557 | INSTALL 4" SS | HILLVIEW | 055 | CHA | 2018 | \$5,498.10 | \$0.00 | |
| PA EAST | 18021426200 | 1850041 | R-3523 UPGRADES (AUSHERMAN) | 559 | INSTALL SS AT R-3523A OUTLET | 374 W MAIN ST | 055 | FAY | 2018 | \$8,534.05 | \$1,914.72 | |
| PA EAST | 18021428300 | 1851242 | SAINT JOHNS REPLACEMENT | 557 | REPLACE 730'-4" PMMP | SAINT JOHNS DR | 055 | CHA | 2018 | \$114,492.05 | \$112,845.88 | \$13,397.68 |
| PA EAST | 18021431600 | 1851850 | FALLING SPRING RD 1962 CS | 557 | REPLACE 11030' 2" & 4" PMMP | FALLING SPRING RD | 055 | CHA | 2019 | \$1,077,456.61 | \$1,770,999.56 | \$585,383.85 |
| PA EAST | 18021433000 | 1851854 | WOODSTOCK RD REPL | 557 | INST 4,907'-2" AND 4" PMMP | WOODSTOCK | 055 | FAY | 2018 | \$406,763.28 | \$561,666.00 | \$230,134.35 |
| PA EAST | 18021436200 | 1851855 | GREENLEA WAY | 557 | INST 11,081' MAIN | GREENLEA | 055 | CHA | 2018 | \$1,528,414.29 | \$1,345,473.03 | \$328,149.74 |
| PA EAST | 18021436401 | 1851852 | HARVEST LN 1962 CS | 557 | REPLACE 8433'-2.4,6" PMMP | HARVEST LN | 055 | CHA | 2018 | \$1,176,362.74 | \$1,132,562.42 | \$266,651.76 |
| PA EAST | 18021441501 | 1853912 | WALTER ST LP | 557 | REPL 60'-4" PMLP & 5'-4" CSLP | WALTER AV | 055 | GRE | 2019 | \$41,923.23 | \$83,627.90 | \$3,111.60 |
| PA EAST | 18021443700 | 1854518 | US 30 & MOUNTVIEW PAVING | 557 | REPLACE 415'-4" CSHP | US 30 & MOUNTVIEW | 055 | FAY | 2019 | \$97,426.89 | \$179,258.11 | \$30,896.67 |
| PA EAST | 18021444500 | 1854713 | 3542 LINCOLN WAY E | 557 | INSTALL 2 SHORTSTOPPS | 3542 LINCOLN WY | 055 | FAY | 2018 | \$9,347.46 | \$10,527.80 | |
| PA NORTH | 18022249600 | 1849785 | S. FREMONT MP INSTALLATION | 559 | INSTALL 420'-4" PMMP | S. FREMONT | 003 | PIT | 2018 | \$95,674.37 | \$94,572.85 | \$95,002.49 |
| PA CENTRAL | 18022249900 | 1849808 | SOUTH PARK RD DPI REAPLACEMENT | 557 | REPLACE 10' | SOUTH PARK RD | 003 | BET | 2018 | \$12,598.42 | \$7,157.97 | \$816.00 |
| PA NORTH | 18022250100 | 1849810 | 3RD STREET REPLACEMENT PROJECT | 557 | INSTALL 1064'-2" PMLP | 1320 3RD ST | 007 | BVR | 2019 | \$136,048.68 | \$182,303.57 | \$15,894.41 |
| PA CENTRAL | 18022250600 | 1636133 | HABERMAN REPLACEMENT PROJECT | 557 | REPLACE MAIN ON DELMONT AVE | DELMONT AV | 003 | PIT | 2018 | \$176,571.16 | \$179,416.33 | \$73,490.37 |

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|------------|-------------|---------|--|-----|--------------------------------|---------------------|-----|-----|------|--------------|--------------|--------------|
| PA CENTRAL | 18022251100 | 1849845 | 2221 - TEXAS - REPL JO | 557 | INSTALL 39' - 2" PLP | TEXAS AV | 003 | BET | 2018 | \$15,335.54 | \$6,035.20 | \$3,247.32 |
| PA CENTRAL | 18022251701 | 1849886 | AGNEW INSULATOR | 557 | REPLACE MAIN FOR INSULATOR | AGNEW RD | 003 | PIT | 2018 | \$92,373.80 | \$160,023.81 | \$61,543.43 |
| PA CENTRAL | 18022252100 | 1849899 | MIDDLETOWN REPLACEMENT PROJECT | 557 | REPLACE 1218' OF 6" | MIDDLETOWN RD | 003 | PIT | 2018 | \$646,626.86 | \$589,728.91 | \$381,811.55 |
| PA NORTH | 18022252600 | 1636108 | FURNACE ST REGULATOR 2077 REPLACEMENT | 559 | -200'-8" CSHP INLET PIPING | FURNACE ST | 073 | N-C | 2018 | \$554.80 | \$68,656.62 | |
| PA NORTH | 18022252800 | 1636108 | FURNACE ST REGULATOR 2077 REPLACEMENT | 559 | -40'-16" CSMP & 150'-2" PMMP | FURNACE ST | 073 | N-C | 2018 | \$554.80 | \$27,845.18 | |
| PA NORTH | 18022254200 | 1850017 | MAPLE ST REPLACEMENT | 557 | OC -4,000 2 & 4 INCH PM MP | MAPLE | 031 | HAW | 2018 | \$412,543.45 | \$236,090.19 | \$88,288.87 |
| PA CENTRAL | 18022254500 | 1850018 | PROVOST RD | 557 | INSTALL 10'-6" PLP | PROVOST | 003 | PIT | 2018 | \$9,032.51 | \$28,954.85 | \$0.00 |
| PA NORTH | 18022255000 | 1850058 | CENTER AVE REPLACEMENT - AVALON | 557 | LAY 800'-4" PMMP | CENTER AV | 003 | PIT | 2019 | \$247,369.74 | \$231,245.24 | \$182,634.67 |
| PA NORTH | 18022255300 | 1850083 | 3RD AVE REPLACEMENT PROJECT | 557 | INSTALL 552'OF 2"AND 4" PMMP | 3RD AVE | 007 | BVR | 2018 | \$56,899.91 | \$96,959.60 | \$23,537.75 |
| PA NORTH | 18022255700 | 1532462 | REYNOLDS ST REPLACEMENT | 557 | OC -160'-2" PMMP IN ALLEY | CUNNINGHAM AV | 073 | N-C | 2017 | \$21,715.14 | \$996.25 | \$0.00 |
| PA CENTRAL | 18022256500 | 1850144 | CARNAHAN RD RELOCATION - 3"PLP | 561 | INSTALL 45'-2"PLP | CARNAHAN RD | 003 | PIT | 2018 | \$1,508.26 | (\$768.76) | |
| PA CENTRAL | 18022256900 | 1850144 | CARNAHAN RD RELOCATION - 3"PLP | 561 | INSTALL 45'-3"PLP | CARNAHAN RD | 003 | PIT | 2018 | \$5,612.63 | \$11,813.78 | |
| PA NORTH | 18022257900 | 1850226 | WINTER RD REPLACEMENT PROJECT | 557 | OC -1,840' 2', 4' & 6" PMMP | WINTER RD | 073 | N-C | 2019 | \$393,186.85 | \$529,936.41 | \$124,113.44 |
| PA CENTRAL | 18022258100 | 1850237 | DENISE ST REPLACEMENT PROJECT | 557 | INST 1109'-2"&4"PLP | DENISE ST | 003 | PIT | 2018 | \$405,220.10 | \$460,701.74 | \$165,913.29 |
| PA NORTH | 18022259700 | 1316049 | 2239 - FOURTH AND UNION ST REPLACEMENT | 557 | INSTALL 725'-8',6',4',2" PLP | 4TH AV | 123 | WAR | 2018 | \$53,789.97 | \$57,312.73 | \$0.00 |
| PA CENTRAL | 18022260500 | 1748886 | 1111 WINGATE ST | 559 | LAY 80'-2"PLP | WINGATE | 003 | PIT | 2018 | \$7,090.02 | \$36,867.36 | \$25,012.06 |
| PA CENTRAL | 18022260700 | 1850401 | WALNUT & MOYE REPAIR | 557 | REPLACE 6' FT OF MAIN | WALNUT ST | 003 | PIT | 2018 | \$8,383.14 | \$7,907.88 | \$3,709.00 |
| PA NORTH | 18022260900 | 1850403 | BON AIRE RD RELOCATION | 561 | INSTALL 230'-2" PMMP | BON AIRE RD | 083 | DER | 2018 | \$24,319.31 | \$20,594.18 | |
| PA CENTRAL | 18022261700 | 1850463 | WALNUT ST REPLACEMENT | 557 | INST 330'-2" PLP | WALNUT ST EXT | 003 | CAR | 2018 | \$98,294.34 | \$124,652.32 | \$40,316.43 |
| PA NORTH | 18022262400 | 1638577 | CRESCENT HEIGHTS AMRP - REPLACEMENT | 557 | INSTALL 480'-2" PMLP | KENAH | 007 | N-B | 2018 | \$42,431.31 | \$33,083.25 | \$843.70 |
| PA NORTH | 18022262600 | 1635153 | STONEY LONESOME ROAD REPLACEMENT | 557 | INSTALL 115'-6',4',2" PMMP | PENNSYLVANIA AV E | 123 | WAR | 2019 | \$37,198.68 | \$42,473.97 | |
| PA NORTH | 18022263200 | 1640269 | FREEDOM ROAD REG | 561 | RELOCATE 580'-6"PHP | FREEDOM RD | 019 | CRA | 2019 | \$119,845.98 | \$136,541.93 | \$1,435.14 |
| PA CENTRAL | 18022263700 | 1635352 | BRENTVIEW DRIVE REPLACEMENT | 557 | INSTALL 1,150'-4" PMLP | BRENTVIEW DR | 003 | PIT | 2018 | \$241,195.94 | \$244,471.13 | \$161,782.26 |
| PA NORTH | 18022263901 | 1850717 | RODNEY ST - CLYMER PHASE 2 ADDITION | 557 | INSTALL -3,796'-4"&2" PMMP | RODNEY | 063 | CLY | 2019 | \$374,433.07 | \$428,735.86 | \$37,341.14 |
| PA CENTRAL | 18022264800 | 1850830 | CALHOUN & AMANDA | 557 | REPLACE MAIN/ABANDON LEAKAGE | 1051 AMANDA AV | 003 | PIT | 2018 | \$45,438.75 | \$30,656.42 | \$13,897.94 |
| PA NORTH | 18022265100 | 1534312 | ABD R-1415/INSTALL R-4791 | 561 | OC 560'-4"PMMP TO INLET R4791 | ROBINSON ST REV | 073 | N-C | 2018 | \$84,389.81 | \$45,595.64 | \$9,258.73 |
| PA NORTH | 18022265500 | 1534312 | ABD R-1415/INSTALL R-4791 | 561 | OC 220'-8"PMMP OUTLET OF R4791 | ROBINSON ST REV | 073 | N-C | 2018 | \$89,596.37 | \$88,550.75 | \$25,196.62 |
| PA NORTH | 18022266200 | 1850885 | RT 68 BARE STEEL REPLACEMENT PROJECT | 557 | INSTALL -800' PMMP | ROUTE 68 | 007 | ROC | 2018 | \$33,268.49 | \$111,882.64 | \$16,195.50 |
| PA CENTRAL | 18022266400 | 1850899 | THE BLVD REPLACEMENT | 557 | INSTALL 10'-4" PLP | THE BLVD | 003 | PIT | 2018 | \$2,967.05 | \$9,875.03 | \$2,470.00 |
| PA NORTH | 18022267200 | 1851014 | HILAND AVE REPLACEMENT PROJECT | 557 | LAY 2240'-4" PMLP | HILAND | 003 | COR | 2019 | \$517,777.60 | \$742,700.24 | \$331,335.69 |
| PA NORTH | 18022267600 | 1851059 | VINE STREET REPLACEMENT PROJECT | 557 | DB -520' OF 4" PMLP | VINE ST | 073 | N-C | 2018 | \$85,351.70 | \$150,710.69 | \$52,213.57 |
| PA NORTH | 18022270400 | 1533010 | SR0065 AT CASCADE PARK RR BRIDGE | 561 | OC 550'-4"PMMP CASCADE PK BRID | E WASHINGTON ST | 073 | N-C | 2018 | \$224,705.30 | \$121,780.11 | \$22,359.40 |
| PA CENTRAL | 18022271300 | 1850653 | VERMONT AVE LP REPLACEMENT | 557 | INSTALL 1180'-8',6" PLP | VERMONT | 003 | PIT | 2018 | \$445,327.89 | \$916,170.81 | \$252,550.61 |
| PA NORTH | 18022272100 | 1851376 | 2231 - TAFFY RUN - REPL JO | 557 | INSTALL -420' 2" PMMP | TAFFY RUN | 007 | ROC | 2018 | \$22,544.16 | \$30,451.51 | \$13,748.35 |
| PA NORTH | 18022272900 | 1851526 | GRANDVIEW AVE REPLACEMENT | 557 | INSTALL 750'-2" PMLP | GRANDVIEW AV | 003 | COR | 2019 | \$82,614.74 | \$44,809.09 | \$7,372.30 |
| PA CENTRAL | 18022274300 | 1851585 | HICKORY STREET 5" PMLP REPLACEMENT | 557 | INSTALL 5'-2" PMLP | HICKORY | 003 | MCK | 2018 | \$10,186.60 | \$7,913.51 | \$2,551.01 |
| PA NORTH | 18022274900 | 1851608 | SR208 PENNDOT BRIDGE RELOCATION | 557 | DB & OC - 920'-4" PMMP | SR 208 | 121 | CLI | 2018 | \$98,919.55 | \$65,735.80 | |
| PA CENTRAL | 18022275400 | 1851624 | CENTER STREET | 557 | INSTALL 190'-2" PMLP | CENTER ST | 003 | MCK | 2018 | \$21,799.36 | \$27,025.32 | \$13,391.02 |
| PA CENTRAL | 18022276400 | 1851651 | HICKORY STREET REPLACEMENT | 557 | INSTALL 275'-2" PMLP | HICKORY | 003 | MCK | 2019 | \$28,910.83 | \$62,550.19 | \$20,981.03 |
| PA NORTH | 18022277000 | 1851655 | PINE STREET REPLACEMENT PROJECT | 557 | INSTALL -957'-4" PMMP | PINE ST | 073 | N-C | 2019 | \$213,879.16 | \$236,755.30 | \$195,423.66 |
| PA NORTH | 18022277700 | 1851685 | ECKERT LEAKAGE REPLACEMENT | 557 | INSTALL 2200' OF 6" PMMP | ECKERT RD | 007 | MON | 2019 | \$348,780.97 | \$695,112.17 | \$222,408.31 |
| PA NORTH | 18022279100 | 1851770 | SR 338 PENNDOT RELOCATION | 557 | OC & DB 2680'-2" PM IP | ROUTE 338 | 031 | KNO | 2018 | \$173,810.97 | \$127,185.15 | \$154.40 |
| PA NORTH | 18022282201 | 1851845 | GLARIUS AVE REPLACEMENT | 557 | INSTALL 725'-2" PMMP | GLARIUS | 003 | PIT | 2019 | \$131,915.55 | \$165,106.92 | \$118,003.47 |
| PA NORTH | 18022283200 | 1851909 | 2231 - 1ST - REPL JO | 557 | INSTALL 245'-4" PMLP | 1ST ST | 007 | FRE | 2018 | \$0.00 | \$775.59 | |
| PA CENTRAL | 18022284900 | 1852045 | 416 MAYTIDE DPI REPAIR | 557 | REPLACE 5' TO REMOVE FITTING | MAYTIDE | 003 | PIT | 2018 | \$19,168.50 | \$19,400.77 | \$737.10 |
| PA NORTH | 18022285100 | 1852048 | SILVER LANE ACTIVE CORROSION | 557 | 1990'-4"PMMP AC 10/31/19 | SILVER | 003 | COR | 2019 | \$343,913.21 | \$618,828.82 | \$327,229.14 |
| PA NORTH | 18022285600 | 1533533 | PM - D-82 GSP BETTERMENT | 559 | INSTALL 400'-2" PMMP | WEXFORD RUN | 003 | WEX | 2018 | \$93,348.05 | \$75,470.94 | \$17,856.84 |
| PA NORTH | 18022286300 | 1635861 | ABN R-1540 INST R-4793 | 559 | OUTLET PIPING R-4793 | WALLROSE HEIGHTS RD | 007 | BAD | 2019 | \$13,304.97 | \$35,954.82 | \$5,928.75 |
| PA NORTH | 18022288400 | 1852163 | VIRGINIA AVE REPLACEMENT PROJECT | 557 | INSTALL -855'8" & 615'2" PHHP | VIRGINIA AV | 007 | ROC | 2019 | \$567,082.76 | \$656,626.36 | \$314,289.78 |
| PA CENTRAL | 18022289300 | 1852172 | POPLAR HP RELOCATION | 561 | RELOCATE 16" HP | POPLAR | 003 | PIT | 2018 | \$269,814.62 | \$378,459.97 | \$22,281.17 |
| PA NORTH | 18022289800 | 1530818 | POD 88 EQUIPMENT UPGRADES | 559 | PM - POD 88 MAIN INSTALL | LACOCK AND MAPLE ST | 007 | ROC | 2018 | \$55.14 | \$26,556.70 | |
| PA NORTH | 18022290900 | 1849940 | REGULATOR 86 - DUFF ALY | 559 | INSTALL MP INLET R-86 | DUFF AL | 003 | PIT | 2018 | \$44,157.24 | \$63,834.13 | \$237.00 |
| PA NORTH | 18022291100 | 1849940 | REGULATOR 86 - DUFF ALY | 559 | INSTALL LP OUTLET LEG R-86 | DUFF AL | 003 | PIT | 2018 | \$22,304.24 | \$74,132.13 | \$28,086.75 |
| PA CENTRAL | 18022293900 | 1852486 | SEBRING AVENUE REPLACEMENT | 557 | INSTALL 2920'-2"&4" PMMP | SEBRING | 003 | PIT | 2019 | \$441,136.46 | \$841,181.38 | \$512,359.20 |
| PA CENTRAL | 18022294700 | 1852511 | SLEEPY HOLLOW ST PROJECT | 557 | REPLACE 40'-6"PLP | SLEEPY HOLLOW RD | 003 | PIT | 2018 | \$14,397.42 | \$32,665.09 | \$3,072.67 |
| PA NORTH | 18022297000 | 1852765 | FLETCHER REPLACEMENT | 557 | INSTALL 1350'-2" PMP | FLETCHER LN | 007 | FRE | 2018 | \$50,790.70 | \$64,082.26 | \$20,700.30 |
| PA CENTRAL | 18022297800 | 1852795 | MCNEILLY BRIDGE ABANDONMENT | 557 | SQUEEZE AND CAP MAIN AT BRIDGE | MCNEILLY BRIDGE | 003 | PIT | 2018 | \$16,497.89 | \$2,843.74 | \$0.00 |
| PA NORTH | 18022299700 | 1853016 | PEARSON ST REPLACEMENT | 557 | INSTALL 840', 2&4" PMMP | PEARSON ST | 073 | N-C | 2019 | \$131,470.89 | \$133,345.01 | \$81,702.37 |

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| PA CENTRAL | 18022300200 | 1853056 | WILLOW TERRACE EXTENTION | 559 | INSTALL 20'-2" PMMP | WILLOW TERRACE | 003 | BET | 2018 | \$2,634.86 | \$6,840.43 | |
| PA CENTRAL | 18022301400 | 1853157 | RECTENWALD - REPL JO | 557 | REPLACE 485FT PLP | RECTENWALD | 003 | PIT | 2018 | \$110,865.93 | \$140,070.45 | \$84,837.26 |
| PA NORTH | 18022303900 | 1853246 | MAIN ST WAMPUM REPLACEMENT | 557 | INSTALL 131'-6" & 8" PMLP | MAIN ST | 073 | WAM | 2019 | \$109,554.73 | \$192,736.11 | \$36,570.20 |
| PA NORTH | 18022305001 | 1101114 | D-1395 REPLACEMENT | 557 | PM - D-1395 PHASE I | PITTSBURGH RD | 073 | N-C | 2019 | \$4,000,000.00 | \$3,817,928.85 | \$194,897.02 |
| PA NORTH | 18022306300 | 1853356 | 3RD AVE NEW BRIGHTON - LP | 557 | INSTALL 1,214'-6" PMLP | 3RD | 007 | N-B | 2019 | \$243,875.41 | \$225,515.36 | \$3,354.15 |
| PA CENTRAL | 18022307600 | 1853431 | 2221 - BROOK - REPL JO | 557 | INSTALL 250'-2" PLP MAIN | BROOK | 003 | PIT | 2018 | \$20,160.88 | \$34,389.81 | \$12,366.23 |
| PA NORTH | 18022308500 | 1853501 | CHERRY RUN ROAD REPLACEMENT | 557 | -2100'-4" & 6" PM MP | CHERRY RUN RD | 031 | RIM | 2018 | \$276,668.52 | \$301,341.86 | \$83,835.70 |
| PA NORTH | 18022309801 | 1853573 | LAY-LINGTON ROAD REPLACEMENT PROJECT | 557 | LAY-2800'-2" & 4" PMMP | DARLINGTON RD | 007 | AMB | 2019 | \$258,614.50 | \$280,636.02 | \$29,555.09 |
| PA CENTRAL | 18022310000 | 1853582 | 2221 - BAUSMAN - REPL JO | 557 | INSTALL OUTLET OF NEW REG | BAUSMAN | 003 | PIT | 2019 | \$20,848.27 | \$147,277.95 | \$1,654.80 |
| PA NORTH | 18022310400 | 1853598 | 2231 - BELLEVUE - REPL JO | 557 | LAY 160'-4" PMLP | BELLEVUE RD | 003 | PIT | 2018 | \$29,429.77 | \$37,734.19 | \$0.00 |
| PA NORTH | 18022310800 | 1853624 | W CORYDON STREET REPLACEMENT | 557 | INSTALL 5,045'-2", 4", 6" PMMP | CORYDON ST | 083 | BRA | 2019 | \$963,959.60 | \$1,142,468.67 | \$775,639.86 |
| PA NORTH | 18022311500 | 1853634 | SALEM ROAD REPLACEMENT | 557 | INSTALL 4,450'-4", 2" PMMP | SALEM RD | 031 | ST- | 2019 | \$275,764.67 | \$327,883.96 | \$0.00 |
| PA NORTH | 18022313200 | 1853705 | R-3101 INLET LEG REPLACEMENT | 557 | REPLACE INLET LEG ON R-3101 | PAXTON AV | 007 | BVR | 2018 | \$58,117.47 | \$77,034.62 | \$18,884.84 |
| PA NORTH | 18022313600 | 1853744 | 388 CHERRY RUN ROAD REPLACEMENT | 557 | OC - 80'-2" PMLP | 388 CHERRY RUN RD | 031 | RIM | 2018 | \$19,130.17 | \$28,920.75 | |
| PA NORTH | 18022313800 | 1854089 | 9TH AVE REPLACEMENT PROJECT | 557 | 9TH AVE AC 09/29/2019 | 9TH AV | 007 | BVR | 2019 | \$430,675.89 | \$487,676.58 | \$351,586.38 |
| PA NORTH | 18022314000 | 1853669 | SCHELL DR REPLACEMENT | 557 | INSTALL 1174'-2" PMMP | SCHELL DR | 007 | AMB | 2019 | \$58,287.11 | \$91,424.33 | \$36,720.00 |
| PA NORTH | 18022315201 | 1853811 | 2231 - LACOCK - REPL JO | 557 | INSTALL 1,000'-4" PMLP | LACOCK | 007 | ROC | 2018 | \$300,231.16 | \$507,349.03 | \$137,053.39 |
| PA CENTRAL | 18022315600 | 1853827 | FRANKLIN DRIVE REPLACEMENT | 557 | INSTALL -87'-4" PLP | FRANKLIN | 003 | PIT | 2018 | \$446.80 | \$0.00 | |
| PA NORTH | 18022317100 | 1638577 | CRESCENT HEIGHTS AMRP - REPLACEMENT | 557 | 35'-8" PMMP CRESCENT HEIGHTS | MERCER RD | 007 | N-B | 2018 | \$22,135.00 | \$1,019.92 | |
| PA CENTRAL | 18022317600 | 1853967 | 2221 - RUSTIC - REPL JO | 557 | INSTALL 5' - 1.25" PLP | RUSTIC AV | 003 | PIT | 2018 | \$13,664.23 | \$4,686.07 | \$0.00 |
| PA CENTRAL | 18022318200 | 1853981 | 2221 - FAIRACRES/CURRANHILL REPL | 557 | INSTALL 1360'-4" PMMP | FAIRACRES | 003 | PIT | 2019 | \$533,236.39 | \$369,069.54 | \$237,594.51 |
| PA NORTH | 18022319500 | 1854039 | Trinity Place | 561 | OC 844'-6" PMMP TRINITY RELOCAT | 11068 BABCOCK BV | 003 | GB | 2019 | \$68,761.20 | \$69,125.79 | |
| PA NORTH | 18022319900 | 1635088 | SHENANGO ROAD REPLACEMENT | 557 | INSTALL 6,000'-6" PMIP SHENAN | SHENANGO RD | 007 | BVR | 2019 | \$919,164.61 | \$1,881,580.59 | \$350,706.21 |
| PA CENTRAL | 18022320900 | 1854217 | 2221 - RAMO - REPL JO | 557 | INSTALL 30'-2" PLP | RAMO | 003 | PIT | 2018 | \$22,642.59 | \$7,063.33 | \$0.00 |
| PA CENTRAL | 18022327301 | 1854544 | SEMINOLE DRIVE REPLACEMENT | 557 | INSTALL 2650'-2", 4" PMP | SEMINOLE DR | 003 | PIT | 2019 | \$614,185.52 | \$571,967.81 | \$214,035.28 |
| PA NORTH | 18022328000 | 1854589 | NINEVAH ROAD REPLACEMENT | 557 | OC & DB 2450'-4" & 2" PMMP | NINEVAH RD | 031 | KNO | 2019 | \$231,116.06 | \$102,671.36 | \$0.00 |
| PA NORTH | 18022328500 | 1854607 | 7TH AVE REPLACEMENT | 557 | INSTALL -787'-6" PMLP | 7TH | 007 | BVR | 2019 | \$148,904.42 | \$179,506.28 | \$117,355.14 |
| PA NORTH | 18022329800 | 1854673 | HILANDS AVENUE PAVING | 557 | INSTALL 500'-4" PMLP - PAVING | HILANDS | 003 | PIT | 2019 | \$120,925.59 | \$167,831.14 | \$78,395.77 |
| PA CENTRAL | 18022335500 | 1853981 | 2221 - FAIRACRES/CURRANHILL REPL | 557 | INSTALL 40'-4" PLP MAIN | SHIRAS | 003 | PIT | 2019 | \$11,094.73 | \$47,718.65 | |
| PA CENTRAL | 18022344800 | 1855295 | WARRIORS ROAD REPLACEMENT | 557 | INSTALL 554' OF 4" & 6" PMLP | WARRIORS RD | 003 | PIT | 2019 | \$96,651.93 | \$158,097.49 | \$0.00 |
| PA NORTH | 18022346900 | 1855428 | TUSCARAWAS EMERGENCY BRIDGE RELOCATION | 561 | RELOCATE 70'-2" PMLP BRIDGE | TUSCARAWAS RD | 007 | BEA | 2018 | \$9,472.79 | \$13,486.34 | \$732.00 |
| PA NORTH | 18022355500 | 1855795 | GOLF AVE REPLACEMENT PROJECT | 557 | INSTALL -660' - 4" PMLP | 109 GOLF AV | 073 | ELL | 2019 | \$109,132.89 | \$175,936.07 | \$8,609.61 |
| PA NORTH | 18022356100 | 1855800 | PARK ROAD REPLACEMENT | 557 | 1100'-4'-6" PMMP DPI 11/30/19 | 218 PARK RD | 007 | AMB | 2019 | \$276,878.68 | \$251,809.10 | \$152,863.82 |
| PA NORTH | 18022356300 | 1855802 | ANN ST REPLACEMENT - DPI | 557 | INSTALL -682' - 2" PMMP | 20 ANN ST | 007 | AMB | 2019 | \$90,425.41 | \$149,841.12 | \$6,324.72 |
| PA NORTH | 18022357300 | 1855886 | AUDLEY AVE REPLACEMENT PROJECT | 557 | INSTALL -265' - 2" PMMP | AUDLEY AV | 073 | N-C | 2019 | \$60,124.93 | \$93,951.70 | \$10,787.46 |
| PA NORTH | 18022358200 | 1855947 | NYE AVENUE REPLACEMENT PROJECT | 557 | INSTALL -460' - 2" PMMP | NYE | 007 | ELL | 2019 | \$36,499.08 | \$176,923.79 | \$1,265.12 |
| PA NORTH | 18022360000 | 1856100 | CALIFORNIA AVENUE | 557 | INSTALL 1300- 8" PMMP | CALIFORNIA | 003 | PIT | 2019 | \$465,801.02 | \$596,891.92 | \$220,364.58 |
| PA CENTRAL | 18022360500 | 1856140 | 2221 - OHIO - REPL JO | 557 | INSTALL 80'-4" PLP | OHIO AV | 003 | CLA | 2019 | \$37,814.06 | \$77,755.49 | \$41,472.54 |
| PA NORTH | 18022361300 | 1746657 | EQS EXPANSION METER AND SERVICE LINE | 561 | RELO 10" IN CASING FOR RR SPUR | A-SPACE | 073 | N-C | 2019 | \$99,029.40 | \$166,658.14 | |
| PA NORTH | 18022362500 | 1856370 | ELWOOD CITY - 6TH ST REPLACEMENT | 557 | INSTALL 212'-8" PMLP | 325 6TH ST | 073 | ELL | 2019 | \$190,536.90 | \$267,461.59 | \$15,412.68 |
| PA NORTH | 18022363400 | 1856370 | ELWOOD CITY - 6TH ST REPLACEMENT | 557 | INSTALL -143' - 8" PMMP | 6TH ST | 073 | ELL | 2019 | \$118,561.14 | \$280,501.53 | \$177,463.05 |
| PA NORTH | 18022445700 | 1858605 | WASHINGTON ST LINE EXTENSION | 559 | INSTALL -30' 2" PMLP | WASHINGTON ST | 073 | N-C | 2018 | \$51,374.33 | \$8,342.27 | \$2,020.32 |
| PA CENTRAL | 18022446800 | 1858723 | DAVIS REPLACEMENT PROJECT | 557 | INSTALL 2,100'-2" & 4" PMLP | DAVIS AVE | 003 | CLA | 2019 | \$600,173.45 | \$675,081.48 | \$35,536.92 |
| PA CENTRAL | 18022448300 | 1858804 | DORMONT RELOCATION | 561 | RELOCATE 40'-6" PLP | 908 PARKSIDE AVE | 003 | PIT | 2019 | \$14,537.62 | \$14,073.29 | |
| PA NORTH | 18022450200 | 1637880 | 2238 - DERRICK RD AREA UPGRADE | 557 | INSTALL MP MAINLINE | RUSSELL | 083 | BRA | 2018 | \$593.76 | \$1,968.61 | |
| PA NORTH | 18022454900 | 1744545 | PM - D-82 PHASE II | 559 | PM D 82 PHASE II 12" HDPE | WARREN/BAYNE ROAD | 003 | BRA | 2019 | \$4,950,000.00 | \$5,627,884.90 | \$843,507.94 |
| PA CENTRAL | 18022455401 | 1859381 | MARBURY REPLACEMENT | 557 | INSTALL 2090'-2", 6" PMP | MARBURY | 003 | BET | 2019 | \$579,989.18 | \$615,470.96 | \$126,398.58 |
| PA NORTH | 18022456000 | 1853501 | CHERRY RUN ROAD REPLACEMENT | 557 | INSTALL 150'-2" PM LP | CARR | 031 | RIM | 2018 | \$12,742.67 | \$6,906.09 | |
| PA CENTRAL | 18022457000 | 1859502 | MCCOY RD RELOCATION | 557 | ISNT 2780'-6" PMP | MCCOY | 003 | MCK | 2019 | \$734,880.96 | \$847,892.23 | \$300,822.52 |
| PA CENTRAL | 18022459100 | 1859775 | MORTON ROAD PROJECT | 557 | INSTALL 2,440'-4" PMLP | MORTON | 003 | PIT | 2019 | \$190,700.62 | \$360,456.95 | \$67,946.35 |
| PA NORTH | 18022462800 | 1859918 | EAST WARREN LP ELIMINATION (SHANTZ ST) | 557 | INSTALL 650'-2-8" PMMP | SHANTZ ST | 123 | WAR | 2019 | \$278,982.09 | \$271,747.25 | \$79,114.45 |
| PA NORTH | 18022463400 | 1636384 | BEATTY FARM POD REPLACEMENT | 561 | PM - BEATTY OUTLET | BEATTY FARMS | 073 | N-G | 2018 | \$0.00 | \$0.00 | |
| PA NORTH | 18022464300 | 1860020 | 131 FRANK STREET | 559 | INSTALL 80' - 2" PMLP | FRANK ST | 003 | AMB | 2019 | \$16,183.93 | \$13,881.78 | |
| PA NORTH | 18022464500 | 1638342 | NIXON POD REPLACEMENT | 561 | PM - NIXON HP OUTLET | NIXON POD | 007 | DAR | 2018 | \$0.00 | \$0.00 | |
| PA NORTH | 18022464700 | 1638342 | NIXON POD REPLACEMENT | 561 | PM - NIXON MP OUTLET | NIXON POD | 007 | DAR | 2018 | \$0.00 | \$0.00 | |
| PA NORTH | 18022464800 | 1638342 | NIXON POD REPLACEMENT | 561 | PM - NIXON IP OUTLET | NIXON POD | 007 | DAR | 2018 | \$0.00 | \$0.00 | |
| PA NORTH | 18022465700 | 1744545 | PM - D-82 PHASE II | 559 | PM MP OUTLET SYSTEM | WARRENDALE RD WEXFORD | 003 | BRA | 2019 | \$0.00 | \$2,786.31 | |
| PA NORTH | 18022467001 | 1743355 | CASTEEL DRIVE REGULATOR REPLACEMENT | 559 | IN/OUT PIPING 40# SYSTEM | CASTEEL DR | 003 | PIT | 2019 | \$22,736.79 | \$937.08 | |

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| PA NORTH | 18022467400 | 1534535 | PORTERSVILLE ROAD AREA REPLACEMENT | 557 | INSTALL 10'-4" PMLP | LOOKOUT AV | 073 | ELL | 2018 | \$1,107.00 | \$599.05 | |
| PA CENTRAL | 18023645300 | 1849792 | SHADYSIDE REPLACEMENT PROJECT | 557 | LAY ~800'-2" PMMP | SHADYSIDE | 125 | WAS | 2018 | \$99,835.36 | \$211,055.62 | \$174,704.59 |
| PA CENTRAL | 18023645700 | 1849799 | 2391 - MAIN - REPL JO | 557 | INSTALL ~215'-2" PLP | S MAIN | 125 | MID | 2018 | \$20,409.51 | \$98,431.68 | \$14,195.79 |
| PA SOUTH | 18023646001 | 1746328 | NEW STANTON BETTERMENT | 559 | INSTALL 2329' OF 4" PMMP | WENTSLER ST | 129 | NEW | 2019 | \$717,405.18 | \$960,737.87 | \$43,746.16 |
| PA SOUTH | 18023647600 | 1749509 | E MAIN ST - SR31, SEC 04R | 557 | INST 3,311'-4", 2,293'-2" PMLP | E MAIN ST | 129 | MT | 2018 | \$1,093,316.43 | \$1,425,242.56 | \$542,276.26 |
| PA CENTRAL | 18023648300 | 1849913 | DEWEY AVE REPLACEMENT PROJECT | 557 | INSTALL ~9359' 2", 4" PMP | DEWEY | 125 | WAS | 2019 | \$1,255,096.04 | \$1,876,050.50 | \$746,674.28 |
| PA CENTRAL | 18023648900 | 1849969 | LINDLEY ROAD REPLACEMENT | 557 | INSTALL 5'-2" PMP | LINDLEY RD | 125 | CAN | 2018 | \$6,615.02 | \$9,543.66 | \$2,967.52 |
| PA SOUTH | 18023649500 | 1749509 | E MAIN ST - SR31, SEC 04R | 557 | INST 1,730'-4" PMP, 701'-2" PMP | LIBERTY ST | 129 | MT | 2018 | \$423,320.40 | \$228,929.64 | \$25,447.19 |
| PA SOUTH | 18023650001 | 1850067 | ROSTRAVER VALVE REPLACEMENT | 559 | INSTALL 115'-4" PHHP | POLLACK RUN RD | 129 | BEL | 2018 | \$70,225.30 | \$148,462.55 | \$84.00 |
| PA SOUTH | 18023654000 | 1850195 | 2321 - THIRD - REPL JO | 557 | INSTALL 600'-4" PMLP | THIRD ST | 125 | DON | 2018 | \$124,183.85 | \$206,945.73 | \$114,683.87 |
| PA SOUTH | 18023655200 | 1749251 | CRAFTMOORE RD EXTENSION | 559 | INSTALL 100'-2" PMMP | CRAFTMOORE RD | 051 | BRO | 2018 | \$6,263.57 | \$1,423.17 | |
| PA CENTRAL | 18023656400 | 1642103 | PM - ROBINSON RUN POD REPLACEMENT | 559 | PM - ROBINSON OUTLET | 1250 ROBINSON RUN | 003 | MCD | 2017 | \$0.00 | \$0.00 | |
| PA SOUTH | 18023656900 | 1850524 | 2321 - CATHERINE - REPL JO | 557 | INSTALL 1020'-2" & 4" PMMP | CATHERINE AV | 051 | BRO | 2018 | \$229,090.52 | \$230,089.99 | \$160,627.67 |
| PA CENTRAL | 18023659400 | 1850982 | BOWMAN STREET REPLACEMENT PROJECT | 557 | LAY 760'-2", 585'-4" PMLP | BOWMAN | 003 | CUD | 2018 | \$208,994.47 | \$233,760.19 | \$146,746.51 |
| PA SOUTH | 18023660100 | 1851128 | 2321 - STAHL'S - REPL JO | 557 | INSTALL ~420'-4" PMLP | STAHL'S | 051 | CON | 2018 | \$45,840.66 | \$57,477.11 | \$8,117.76 |
| PA SOUTH | 18023660400 | 1851152 | 2321 - CHESTER - REPL JO | 557 | INSTALL 250'-2" PMMP | CHESTER | 125 | ROS | 2018 | \$51,865.15 | \$55,025.85 | \$27,284.69 |
| PA SOUTH | 18023660600 | 1851157 | D7090 | 557 | INSTALL 60'-8" PMMP | D7090 | 051 | BRO | 2018 | \$18,890.73 | \$5,729.96 | |
| PA SOUTH | 18023661201 | 1851240 | 2321 - CHARLES - REPL JO | 557 | INSTALL 255'-6" PLP | CHARLES | 129 | JEA | 2018 | \$84,023.62 | \$101,664.99 | \$29,363.22 |
| PA CENTRAL | 18023662000 | 1851408 | S MAIN STREET REPLACEMENT PROJECT | 557 | LAY 150'-6" PMLP | S MAIN | 125 | WAS | 2018 | \$84,769.54 | \$58,278.61 | \$11,658.39 |
| PA SOUTH | 18023662700 | 1851593 | 2321 - BRICKEL - REPL JO | 557 | INSTALL 339'-4" PLP | BRICKEL | 129 | JEA | 2019 | \$71,845.34 | \$32,778.73 | \$0.00 |
| PA SOUTH | 18023663800 | 1851759 | 2321 - HAMILTON - REPL JO | 557 | INSTALL 699'-2" PMMP | HAMILTON RD | 129 | N H | 2019 | \$101,197.17 | \$45,097.77 | \$0.00 |
| PA SOUTH | 18023664701 | 1851832 | STATE ST PROJECT | 557 | INSTALL 4,770' OF 2" & 4" PMMP | DALLY RD | 125 | CHA | 2019 | \$1,130,080.89 | \$872,473.50 | \$404,535.76 |
| PA SOUTH | 18023666000 | 1851944 | 2321 - MULLIN - REPL JO | 557 | INSTALL 255'-4" PM-LP | MULLIN AV | 129 | MT | 2018 | \$33,057.44 | \$38,083.06 | \$16,625.76 |
| PA CENTRAL | 18023666500 | 1852095 | MARTIN DRIVE REPLACEMENT PROJECT | 557 | INSTALL 240' PLP | MARTIN | 125 | CAN | 2018 | \$50,810.06 | \$119,754.69 | \$45,322.84 |
| PA SOUTH | 18023669700 | 1749098 | 2321 - CENTER - REPL JO | 557 | INSTALL 2,885' - 2" & 4" PMMP | S CENTER AV | 111 | SOM | 2018 | \$474,787.04 | \$386,069.02 | \$198,138.35 |
| PA SOUTH | 18023670200 | 1852369 | 2321 - EIGHTH - REPL JO | 557 | INSTALL 1,695'-2" PMMP | EIGHTH | 129 | SUT | 2018 | \$204,376.04 | \$146,784.41 | \$95,629.91 |
| PA SOUTH | 18023670401 | 1852377 | 2321 - FELTY - REPL JO | 557 | INSTALL 7520'-2" & 4" PMMP | FELTY ST | 051 | UNI | 2019 | \$1,256,902.10 | \$823,803.39 | \$230,000.28 |
| PA SOUTH | 18023672000 | 1852387 | 2321 - SEARIGHT - REPL JO | 557 | INSTALL ~ 2,771'-2" & 4" PMMP | SEARIGHT AV | 051 | UNI | 2019 | \$370,394.57 | \$247,779.98 | \$84,333.12 |
| PA SOUTH | 18023673400 | 1852405 | 2321 - GREENFIELD - REPL JO | 557 | INSTALL 1449'-2" & 4" PMLP | GREENFIELD RD | 051 | VAN | 2019 | \$253,101.22 | \$271,382.83 | \$132,842.12 |
| PA SOUTH | 18023673900 | 1852427 | 2321 - COLONIAL - REPL JO | 557 | INSTALL 902'-2" AND 4" CS/PMLP | COLONIAL AV | 051 | SMO | 2019 | \$203,660.80 | \$100,808.14 | \$35,308.23 |
| PA CENTRAL | 18023674300 | 1852458 | N MAIN STREET RELOCATION | 561 | RELOCATE ~400' 8" PMP | N MAIN | 125 | WAS | 2019 | \$129,438.50 | \$175,253.17 | \$0.00 |
| PA CENTRAL | 18023674600 | 1852468 | JENNING LANE BETTERMENT PROJECT | 559 | LAY 310'-2" PMLP | JENNINGS | 125 | WAS | 2018 | \$76,197.29 | \$58,461.32 | \$5,426.82 |
| PA CENTRAL | 18023677900 | 1852858 | REAXIS SET REPLACEMENT | 557 | INSTALL ~35'-2" PMP | 980 | 125 | MCD | 2019 | \$37,145.86 | \$31,969.23 | \$0.00 |
| PA CENTRAL | 18023678600 | 1852955 | PROSPERITY PIKE | 559 | INSTALL ~4700' PMP | PROSPERITY PIKE | 125 | PRO | 2019 | \$529,283.41 | \$765,060.61 | \$77,203.08 |
| PA CENTRAL | 18023678800 | 1852956 | PARK AVENUE REPLACEMENT PROJECT | 557 | INSTALL 380'-8" PMMP | PARK AV | 125 | WAS | 2019 | \$65,518.78 | \$108,457.36 | \$3,351.62 |
| PA SOUTH | 18023681400 | 1853084 | SR 481/40 INTERSECTION PROJECT | 557 | INSTALL 2,885'-4" PMMP | OLD NATIONAL PIKE | 125 | BRO | 2018 | \$340,304.81 | \$331,091.19 | \$52,488.23 |
| PA SOUTH | 18023684800 | 1853207 | 2321 - MAGEE - REPL JO | 557 | INSTALL 1549' 2" PMMP | MAGEE DR. | 129 | JEA | 2019 | \$257,823.61 | \$169,074.53 | \$29,677.14 |
| PA CENTRAL | 18023689100 | 1853526 | WILLOW STREET REPLACEMENT PROJECT | 557 | DB ~250'-4" PMLP, OC 30'-4" PMLP | WILLOW | 003 | OAK | 2018 | \$68,954.71 | \$78,944.24 | \$0.00 |
| PA SOUTH | 18023690700 | 1853793 | PURITAN RD | 561 | INSTALL ~ 400'- 4" PMMP | SR3013 | 051 | MCC | 2019 | \$85,415.04 | \$105,289.09 | \$0.00 |
| PA SOUTH | 18023691501 | 1853887 | 2321 - CARLSON - REPL JO | 557 | INSTALL 2116'- 4" PMMP | 10869 CARLSON DR | 129 | N H | 2019 | \$312,018.02 | \$394,200.59 | \$209,829.74 |
| PA SOUTH | 18023692400 | 1853973 | 2321 - WATER - REPL JO | 557 | INSTALL 2" SHORTSTOP | GRANT ST | 111 | MEY | 2018 | \$8,846.23 | \$921.45 | \$0.00 |
| PA SOUTH | 18023693200 | 1852387 | 2321 - SEARIGHT - REPL JO | 557 | INSTALL 120'-4" PMLP | LIBERTY | 051 | UNI | 2019 | \$40,261.74 | \$48,000.36 | \$5,559.91 |
| PA SOUTH | 18023694002 | 1854087 | 2321 - 4TH - REPL JO | 557 | INSTALL 1769'- 4" & 2" PMMP | 4TH ST | 125 | CHA | 2019 | \$585,339.28 | \$603,821.74 | \$371,805.93 |
| PA SOUTH | 18023694901 | 1854158 | SR 88 LANDSLIDE | 557 | INSTALL 400'-4" PMMP | SR 88 | 125 | FRE | 2019 | \$103,586.77 | \$104,854.00 | \$0.00 |
| PA CENTRAL | 18023695100 | 1636023 | BROWNS CREEK REPLACEMENT PROJECT | 557 | INSTALL 315' OF 4" PLP | BROWNS CREEK | 059 | NIN | 2019 | \$50,477.27 | \$47,304.00 | \$82,247.14 |
| PA SOUTH | 18023695500 | 1854179 | 2321 - GREENFIELD - REPL JO | 557 | INST 538'-4" PMMP | 246 GREENFIELD RD | 051 | PER | 2019 | \$58,026.62 | \$90,231.51 | \$23,964.46 |
| PA SOUTH | 18023697100 | 1854296 | CROSS ST | 559 | INSTALL 290'-2" PMLP | CROSS ST | 051 | N S | 2018 | \$27,628.65 | \$43,510.74 | \$14,496.84 |
| PA SOUTH | 18023697900 | 1854234 | SR 1016, SEC A10, PAISLEY | 561 | INST/DB 765'-4" PMP, 75'-2" PMP | SR 1016 WEST BRIDGE | 059 | CAR | 2019 | \$207,527.96 | \$168,455.36 | \$780.25 |
| PA CENTRAL | 18023698600 | 1854489 | HIDDEN VALLEY REPLACEMENT PROJECT | 557 | LAY 80'-2" PHHP | HIDDEN VALLEY | 125 | MCM | 2018 | \$14,249.85 | \$13,554.57 | |
| PA CENTRAL | 18023700000 | 1854686 | ALLISON AVENUE REPLACEMENT PROJECT | 557 | LAY 820'-2" PMMP, 940'-4" PMMP | ALLISON | 125 | WAS | 2019 | \$275,144.74 | \$413,686.51 | \$285,624.99 |
| PA SOUTH | 18023700901 | 1854087 | 2321 - 4TH - REPL JO | 557 | INSTALL 787'-2", 4", 6" PMLP | CONRAD AV | 125 | CHA | 2019 | \$171,164.52 | \$155,098.71 | \$5,586.00 |
| PA SOUTH | 18023701800 | 1854864 | 2321 - 10TH - REPL JO | 557 | INSERT 55'-2" PM-LP | 10TH ST | 051 | CON | 2018 | \$6,394.73 | \$1,552.77 | \$0.00 |
| PA SOUTH | 18023702500 | 1854984 | MOUNTAINVIEW DR | 557 | REPLACE 4" PLASTIC VALVE | MOUNTAINVIEW DR | 051 | SMI | 2018 | \$6,867.32 | \$6,870.41 | \$1,412.38 |
| PA CENTRAL | 18023702800 | 1854988 | VALLEY CHURCH RELOCATION PROJECT | 561 | INSTALL 700'-2" PMMP | VALLEY CHURCH RD | 059 | GRA | 2019 | \$45,596.56 | \$38,220.70 | \$0.00 |
| PA SOUTH | 18023703401 | 1746969 | 2321 - CLAY - REPL JO | 557 | INSTALL 3161' 2", 4", 6", & 8" PLP | CLAY PK | 129 | N H | 2019 | \$755,295.87 | \$711,392.08 | \$314,663.70 |
| PA SOUTH | 18023704200 | 1743220 | MT PLEASANT RAILROAD CROSSING | 559 | INSTALL 60'-12" C, 340'-8" PMP | BRIDGEPORT ST | 129 | MT | 2019 | \$240,684.74 | \$167,579.74 | |
| PA SOUTH | 18023705100 | 1855370 | 2321 - UNION - REPL JO | 557 | INSTALL ~ 5'-4" PMLP | UNION | 051 | UNI | 2018 | \$3,963.79 | \$1,403.41 | \$0.00 |
| PA CENTRAL | 18023705900 | 1855504 | GRAYSVILLE VFC | 557 | INSTALL 300'-2" PMMP MAIN | GRAYSVILLE VFH | 059 | GRA | 2018 | \$64,304.54 | \$46,503.24 | \$4,625.46 |

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| PA SOUTH | 18023706100 | 1748477 | 2321 - SCENERY DR - REPL JO | 559 | INSTALL 460'-2" PMLP | SCENERY DR | 129 | BEL | 2019 | \$48,783.45 | \$77,513.90 | \$18,115.20 |
| PA SOUTH | 18023707900 | 1855819 | 2321 - BLACKSTONE - REPL JO | 557 | INSTALL 334'-4"PMP, 324'-2"PMP | BLACKSTONE AV | 051 | CON | 2018 | \$48,705.35 | \$29,942.01 | \$3,879.81 |
| PA SOUTH | 18023708300 | 1855819 | 2321 - BLACKSTONE - REPL JO | 557 | INSTALL 390'-6" PM-LP | NASSAU ST | 051 | CON | 2019 | \$33,222.17 | \$30,218.28 | \$0.00 |
| PA CENTRAL | 18023708600 | 1855925 | BEESON REPLACEMENT PROJECT | 557 | REPLACE 250'-2" PMMP | BEESON | 125 | MAR | 2018 | \$30,080.35 | \$24,029.25 | \$4,486.00 |
| PA SOUTH | 18023709601 | 1856163 | 2321 - APPLE - REPL JO | 557 | INST 2180'-6" & 2" PMMP | APPLE ST | 051 | UNI | 2019 | \$622,866.89 | \$743,831.56 | \$219,264.08 |
| PA SOUTH | 18023774700 | 1854812 | 2321 - LOWBER - BET JO | 559 | INSTALL 487'-2" PMMP | LOWBER RD | 129 | W N | 2018 | \$17,800.96 | \$22,595.17 | \$0.00 |
| PA SOUTH | 18023775100 | 1859006 | TEXAS ROADHOUSE | 561 | INSTALL 200'-8" PMMP | MAIN ST | 051 | UNI | 2019 | \$61,449.16 | \$59,244.52 | \$2,815.20 |
| PA SOUTH | 18023775300 | 1854234 | SR 1016, SEC A10, PAISLEY | 557 | INSTALL 390'-4"PM-MP | SR 21 | 059 | CAR | 2019 | \$80,855.01 | \$73,610.08 | \$2,491.12 |
| PA SOUTH | 18023775500 | 1854234 | SR 1016, SEC A10, PAISLEY | 561 | INSTALL 640'-4"PM-MP | SR 1016 GUIDE RAIL | 059 | CAR | 2019 | \$72,238.93 | \$62,019.49 | \$780.25 |
| PA SOUTH | 18023775901 | 1746500 | 2321 - OLD ROUTE 40 - REPL JO | 557 | INSTALL 3378' 2" PMMP | 83 WILLIAMS ST | 051 | BRO | 2019 | \$354,731.49 | \$316,829.62 | \$111,897.64 |
| PA CENTRAL | 18023777400 | 1859438 | TEN MILE RELOCATION PROJECT | 561 | DB 450'-6"PMMP | TEN MILE | 125 | MAR | 2019 | \$77,033.37 | \$120,902.83 | \$6,706.50 |
| PA SOUTH | 18023778300 | 1859698 | 2321 - BRADDOCK - REPL JO | 557 | INSTALL 665'-4"PM-LP | BRADDOCK AV | 129 | N H | 2018 | \$96,268.31 | \$161,909.83 | \$74,508.60 |
| PA SOUTH | 18023778900 | 1859871 | 2321 - JUNIOR - REPL JO | 557 | INSERT 225'-2" PMLP | JUNIOR ST | 051 | UNI | 2018 | \$6,032.05 | \$8,187.45 | \$2,622.65 |
| PA SOUTH | 18023781400 | 1853887 | 2321 - CARLSON - REPL JO | 557 | INSTALL 6" SS | CARLSON DR | 129 | N H | 2019 | \$1,904.75 | \$10,985.06 | |
| PA EAST | 18024493600 | 1849794 | MEETING HOUSE RD BETTERMENT | 559 | INSTALL 230'-2" PMMP | MEETING HOUSE RD | 133 | MAN | 2018 | \$19,252.20 | \$16,232.60 | \$1,383.58 |
| PA EAST | 18024493800 | 1849840 | 2451 - CURTIN - REPL JO | 557 | REPLACE VALVE ON CURTIN | CURTIN | 027 | UNI | 2018 | \$7,174.02 | \$7,451.09 | |
| PA EAST | 18024494200 | 1424582 | RIDGE AVE STATION | 559 | PM - OUTLET PIPE INSTALL | RIDGE AV | 133 | HAN | 2017 | \$0.00 | \$21,552.30 | |
| PA EAST | 18024494600 | 1849918 | ARMOUR | 557 | INSTALL -285'-2" PMMP | ARMOUR | 027 | BEL | 2018 | \$30,737.77 | \$26,942.00 | \$1,100.10 |
| PA EAST | 18024495101 | 1640764 | CHERRY TREE PHASE 4 | 561 | RELOCATE 337'-12" WTMP | RIDGE AVE | 133 | HAN | 2018 | \$227,695.38 | \$228,330.30 | |
| PA EAST | 18024496000 | 1850804 | REGENTS GLEN BETTERMENT | 559 | BORE - INSTALL 100'-2" PMMP | INDIAN ROCK DAM ROAD | 133 | YOR | 2018 | \$15,517.99 | \$18,490.26 | \$1,036.64 |
| PA EAST | 18024500800 | 1850625 | 2421 - EASTLAND - REPL JO | 557 | INSTALL 2444'-2" PMMP | EASTLAND AV | 133 | YOR | 2018 | \$202,721.30 | \$372,602.70 | \$170,196.60 |
| PA EAST | 18024501000 | 1850632 | VILLAGE CIR BETTERMENT | 559 | INSTALL 280'-2" PMMP | VILLAGE CIR | 133 | MAN | 2019 | \$20,784.59 | \$30,880.99 | \$4,778.66 |
| PA EAST | 18024503201 | 1743633 | POPLAR - SHERIDAN | 557 | LP - INSTALL 500' OF 4" | POPLAR | 133 | YOR | 2019 | \$289,302.65 | \$304,835.12 | \$7,837.80 |
| PA EAST | 18024503601 | 1743633 | POPLAR - SHERIDAN | 557 | MP - INSTALL 1715' OF PMMP | POPLAR ST | 133 | YOR | 2019 | \$1,078,955.64 | \$1,470,954.87 | \$597,978.95 |
| PA EAST | 18024503800 | 1850882 | N GEORGE ST BETTERMENT | 559 | INSTALL 15'-4" CSMP | N GEORGE ST | 133 | MAN | 2019 | \$18,845.26 | \$50,500.81 | \$5,085.78 |
| PA EAST | 18024505600 | 1636247 | PM - ADMIRE POD REBUILD | 559 | PM - ADMIRE MAIN | 4741 N BIESECKER | 133 | YOR | 2017 | \$0.00 | \$0.00 | |
| PA EAST | 18024505900 | 1851076 | HARRISON SUNSET | 557 | INSTALL -600'-2" PMMP | HARRISON SUNSET | 027 | PLE | 2018 | \$124,947.37 | \$64,689.77 | \$972.72 |
| PA EAST | 18024506400 | 1851110 | 2421 - PEQUEA AVE - REPL JO | 557 | INST 220'-2"PMMP | PEQUEA AVE | 133 | YOR | 2018 | \$49,647.44 | \$75,119.73 | \$38,380.76 |
| PA EAST | 18024506600 | 1850735 | OAT MAN ST | 557 | INST 4,665'-2" PMMP | JUNE | 133 | YOR | 2019 | \$1,084,292.35 | \$1,353,489.43 | \$754,306.90 |
| PA EAST | 18024508900 | 1748972 | TORONITA BRIDGE | 561 | TORONITA ST BRIDGE TEMP RELO | 1700 TORONITA ST | 133 | YOR | 2018 | \$23,973.30 | \$18,987.38 | |
| PA EAST | 18024509401 | 1851223 | DOVER PARK RELOCATION - MUNICIPAL RD | 557 | INST 7574'-8"PMMP, 874'-2"PMMP | MUNICIPAL RD | 133 | YOR | 2019 | \$2,237,487.71 | \$2,462,853.92 | \$387,612.84 |
| PA EAST | 18024510200 | 1851422 | S PERSHING AVE (MANOR PH 3) | 557 | INST -447'-4" & -790'-6" PMLP | S PERSHING | 133 | YOR | 2019 | \$267,220.58 | \$580,961.75 | \$379,511.04 |
| PA EAST | 18024513400 | 1851620 | MARTHA ST | 557 | INST -215'-2" PMLP | MARTHA | 133 | HAN | 2019 | \$36,711.13 | \$23,209.76 | \$0.00 |
| PA EAST | 18024514600 | 1424582 | RIDGE AVE STATION | 559 | INSTALL 8" VALVE | RIDGE AVE | 133 | HAN | 2018 | \$25,263.49 | \$44,595.45 | |
| PA EAST | 18024515701 | 1851875 | 2421 - WAYNE - REPL JO | 557 | INSTALL 2023'-2" PMMP | WAYNE AV | 133 | YOR | 2019 | \$1,355,488.88 | \$908,813.50 | \$370,567.67 |
| PA EAST | 18024516001 | 1851892 | DICKS DAM RD | 561 | INST -1,255'-6" PMMP | CARLISLE PK | 001 | NEW | 2018 | \$285,789.67 | \$291,852.48 | \$0.00 |
| PA EAST | 18024518700 | 1749039 | Dover TWP Municipal | 561 | INST 40'-2"PMMP | 2480 W CANAL RD | 133 | DOV | 2018 | \$15,088.28 | \$1,994.11 | \$0.00 |
| PA EAST | 18024519300 | 1748168 | WELLSPAN HANOVER HEALTH CENTER | 561 | INSTALL -55'-8" PMMP | BALTIMORE ST | 133 | HAN | 2018 | \$37,389.80 | \$41,108.10 | \$0.00 |
| PA EAST | 18024522800 | 1852677 | 2421 - POTOMAC - REPL JO | 557 | INSTALL 4" SS | POTOMAC | 133 | HAN | 2019 | \$42,471.40 | \$145,013.43 | \$109,473.53 |
| PA EAST | 18024523100 | 1319287 | CARLISLE STREET REPLACEMENT PROJECT | 557 | INSTALL LP JUMPERS | BALTIMORE | 133 | HAN | 2018 | \$70.14 | \$11,531.62 | |
| PA EAST | 18024526900 | 1852974 | BECK MILL RD PHASE 1 | 557 | INST 3160'-2,4,6,8" PMMP | BECK MILL | 133 | HAN | 2019 | \$458,934.14 | \$917,989.01 | \$299,291.06 |
| PA EAST | 18024527400 | 1853015 | 2421 - COTTAGE - REPL JO | 557 | INSTALL 450'-4" & 230'-2" PMMP | E COTTAGE PL | 133 | YOR | 2019 | \$112,764.77 | \$232,559.02 | \$207,715.18 |
| PA EAST | 18024528600 | 1853092 | 2421 - DEVON - REPL JO | 557 | INSTALL 756'-2" PMMP | DEVON RD | 133 | YOR | 2019 | \$52,949.02 | \$53,640.45 | \$8,719.97 |
| PA EAST | 18024529200 | 1853148 | HAUPT | 557 | INSTALL -658'-2" MDPE IP | HAUPT | 027 | BEL | 2019 | \$101,391.96 | \$91,788.97 | \$54,829.64 |
| PA EAST | 18024529500 | 1853200 | SR 851 EXIT 4 | 561 | SR 0851 EXIT 4 RELOC | | 133 | SHR | 2019 | \$170,761.36 | \$217,242.81 | \$0.00 |
| PA EAST | 18024529901 | 1748995 | 2421 - STONE RIDGE - REPL JO | 557 | INSTALL 350'-2" & 1350'-4"PMMP | STONE RIDGE RD | 133 | YOR | 2019 | \$447,807.74 | \$402,062.63 | \$200,879.18 |
| PA EAST | 18024530600 | 1853283 | 2421 - FREYSVILLE - REPL JO | 557 | REPLACE LEAKING TEE | FREYSVILLE | 133 | YOR | 2018 | \$12,022.35 | \$14,214.40 | \$2,202.86 |
| PA EAST | 18024530902 | 1853341 | LOUCKS RD RELOCATION | 561 | INSTALL 8" PLASTIC | LOUCKS RD | 133 | YOR | 2018 | \$16,317.56 | \$16,539.15 | \$0.00 |
| PA EAST | 18024531200 | 1748168 | WELLSPAN HANOVER HEALTH CENTER | 561 | RELOCATE 8" PMMP | BALTIMORE ST | 133 | HAN | 2018 | \$51,291.55 | \$46,858.53 | \$1,202.00 |
| PA EAST | 18024531500 | 1853403 | 2421 - WHITEFORD - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 1801 WHITEFORD RD | 133 | YOR | 2018 | \$3,550.87 | \$23,364.19 | \$2,069.39 |
| PA EAST | 18024532400 | 1853494 | W MARKET ST REPLACEMENT | 557 | INSTALL 1333'-6" PMMP | W MARKET ST | 133 | MAN | 2019 | \$178,247.66 | \$246,245.80 | \$27,934.35 |
| PA EAST | 18024532700 | 1853520 | 2421 - ROCKWOOD - REPL JO | 557 | INSTALL 1171'-2" PMMP | ROCKWOOD AV | 133 | MAN | 2018 | \$104,910.37 | \$215,820.23 | \$171,228.34 |
| PA EAST | 18024532900 | 1853521 | 2421 - HAYWARD - REPL JO | 557 | OC-INSTALL -3605'-2" PMMP | HAYWARD | 133 | GLE | 2019 | \$430,634.74 | \$467,113.86 | \$359,693.30 |
| PA EAST | 18024533800 | 1853606 | 2421 - REINECKE - REPL JO | 557 | INST 1430'-2"PMMP | REINECKE PL | 133 | YOR | 2019 | \$237,972.34 | \$318,651.28 | \$38,840.32 |
| PA EAST | 18024534800 | 1853629 | 2421 - ALTLAND - REPL JO | 557 | INSTALL 3791'-2"PMMP | ALTLAND AV | 133 | YOR | 2019 | \$611,193.80 | \$608,393.68 | \$238,590.20 |
| PA EAST | 18024535800 | 1853654 | BEAVER ST | 557 | INSTALL -4872'-2",4" MDPE MP | E BEAVER | 027 | BEL | 2019 | \$711,938.90 | \$482,336.88 | \$254,107.55 |
| PA EAST | 18024536100 | 1746947 | PENNDOT VALLEY ST BRIDGE | 561 | VALLEY ST BRIDGE - PH2 | VALLEY ST BRIDGE PH2 | 133 | GLE | 2018 | \$54,367.37 | \$59,533.50 | \$0.00 |
| PA EAST | 18024536600 | 1853683 | RUTH AVE | 557 | INST -1120'-4" AND 6" PLP/MP | W MIDDLE | 133 | HAN | 2019 | \$348,389.31 | \$503,280.34 | \$267,602.93 |

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| PA EAST | 18024536800 | 1640880 | KNOLL LANE | 557 | INST 3457'-4" & 1484'-2" PMMP | KNOLL PH 2 | 133 | YOR | 2019 | \$798,776.84 | \$1,231,110.20 | \$744,985.73 |
| PA EAST | 18024537600 | 1853695 | 2421 - FORNEY - REPL JO | 557 | INSTALL 2,519'-2" PMMP | FORNEY | 133 | HAN | 2019 | \$503,268.30 | \$376,707.50 | \$230,790.05 |
| PA EAST | 18024538000 | 1853702 | 2205 CARLISLE RD | 559 | INSTALL SHORT STOP | CARLISLE RD | 001 | ASP | 2018 | \$1,054.16 | \$16,274.46 | |
| PA EAST | 18024539000 | 1851223 | DOVER PARK RELOCATION - MUNICIPAL RD | 557 | INST 410'-8"PMMP & 29'-2"PMMP | MUNICIPAL RD | 133 | DOV | 2018 | \$27,789.49 | \$24,113.39 | \$0.00 |
| PA EAST | 18024539301 | 1853836 | 2421 - CLOVER - REPL JO | 557 | REPLACE MAIN - LEAKAGE | CLOVER LN | 133 | YOR | 2019 | \$210,080.78 | \$250,502.36 | \$89,699.55 |
| PA EAST | 18024540700 | 1853928 | 2421 - MAPLE - REPL JO | 557 | INSTALL 257'-2" PMMP | E MAPLE ST | 133 | YOR | 2019 | \$83,679.16 | \$216,916.58 | \$103,408.51 |
| PA EAST | 18024541200 | 1853956 | THE STATION LOWERING | 561 | LOWER -200'-6" PMMP | TOFTREES AV | 027 | STA | 2018 | \$28,638.79 | \$32,951.46 | \$0.00 |
| PA EAST | 18024542400 | 1853994 | FLORIDA AVE CI REPLACEMENT | 557 | REPLACE 1340'-2" PMMP | FLORIDA AV | 133 | YOR | 2019 | \$425,646.53 | \$313,037.03 | \$268,053.25 |
| PA EAST | 18024542601 | 1853997 | WILSON ST CI REPLACEMENT | 557 | REPLACE 1160'-2" PMMP | WILSON ST | 133 | YOR | 2019 | \$493,082.78 | \$570,793.95 | \$220,933.40 |
| PA EAST | 18024542900 | 1854038 | 2421 - OXFORD - REPL JO | 557 | OC-INSTALL -1475'-PMMP | OXFORD ST | 133 | YOR | 2019 | \$209,233.49 | \$171,451.80 | \$72,858.05 |
| PA EAST | 18024544600 | 1636809 | FILBERT ST | 557 | INSTALL LP JUMPER | HIGH | 133 | HAN | 2018 | \$56.04 | \$0.00 | |
| PA EAST | 18024545600 | 1854287 | BROADWAY TIE IN | 559 | INSTALL 6" PLP | BROADWAY | 133 | HAN | 2018 | \$50,814.90 | \$30,114.65 | \$5,046.80 |
| PA EAST | 18024546000 | 1854307 | NOONAR PARK | 557 | INSTALL -2,488'-2" PMMP | PARKWAY | 133 | YOR | 2019 | \$516,318.35 | \$584,867.72 | \$186,441.86 |
| PA EAST | 18024546200 | 1641361 | MOUNT NITTANY MEDICAL CENTER | 559 | INSTALL 2" SHORTSTOP | 1800 PARK AVE | 027 | STA | 2018 | \$1,181.55 | \$0.00 | |
| PA EAST | 18024547200 | 1854438 | 20 COPPENHAFFER VALVE | 559 | INST CY2934 20 COPPENHAFFER RD | 20 COPPENHAFFER RD | 133 | YOR | 2019 | \$23,348.42 | \$38,748.28 | |
| PA EAST | 18024547600 | 1854459 | CARLISLE PIKE PENNDOT | 557 | INSTALL 1,900'-4" & 980'-2"PMMP | CARLISLE PIKE | 001 | NOX | 2019 | \$501,236.18 | \$794,535.59 | \$538,395.48 |
| PA EAST | 18024549700 | 1854631 | RENTZELS LN | 559 | INSTALL CRITICAL VALVE | RENTZELS LN | 133 | MAN | 2019 | \$8,335.89 | \$26,112.26 | \$2,007.60 |
| PA EAST | 18024550000 | 1854634 | BRANDYWINE LN CRITICAL VALVE | 559 | INSTALL CRITICAL VALVE | BRANDYWINE LN | 133 | MAN | 2019 | \$6,758.58 | \$28,676.88 | \$1,984.90 |
| PA EAST | 18024551400 | 1851422 | S PERSHING AVE (MANOR PH 3) | 557 | INSTALL -15'-2" PMMP MLE | S PERSHING | 133 | YOR | 2018 | \$15,264.09 | \$3,198.69 | \$0.00 |
| PA EAST | 18024556500 | 1855333 | WY ISOLATED CI PROJECTS | 557 | INST 325'-2"PMMP | W PHILADELPHIA | 133 | YOR | 2019 | \$55,362.37 | \$65,816.36 | \$45,095.92 |
| PA EAST | 18024556700 | 1855333 | WY ISOLATED CI PROJECTS | 557 | INST 390'-2"PMMP | N FORREST | 133 | YOR | 2019 | \$98,996.99 | \$121,475.10 | \$118,301.62 |
| PA EAST | 18024556901 | 1855333 | WY ISOLATED CI PROJECTS | 557 | INST 925'-2"PMMP | N GOTWALT | 133 | YOR | 2019 | \$332,395.46 | \$285,673.92 | \$177,003.85 |
| PA EAST | 18024557900 | 1855424 | VALLEY VISTA | 561 | RELOCATE -2905' OF MAIN | VALLEY VISTA | 027 | STA | 2018 | \$50,481.37 | \$66,108.32 | |
| PA EAST | 18024558201 | 1855571 | 1831 HAYWARD RD REPLACEMENT | 557 | REPLACE 360'-2" PMMP | HAYWARD RD | 133 | YOR | 2019 | \$79,725.33 | \$89,004.60 | \$44,058.51 |
| PA EAST | 18024558400 | 1855581 | CHARLES LN REPLACEMENT | 557 | REPLACE 1010'-4" PMLP | CHARLES LN | 133 | YOR | 2019 | \$455,170.29 | \$335,877.86 | \$110,149.29 |
| PA EAST | 18024559400 | 1855714 | 2421 - HIGH - REPL JO | 557 | INSTALL 1432'-2" PMMP | HIGH ST | 133 | YOR | 2019 | \$171,382.17 | \$339,548.24 | \$222,429.91 |
| PA EAST | 18024559600 | 1855719 | TAYLOR ST | 557 | INSTAL -820'-2" MDPE MP | TAYLOR | 027 | STA | 2019 | \$116,887.93 | \$306,217.86 | \$0.00 |
| PA EAST | 18024559800 | 1855720 | PROSPECT | 557 | INSTALL -570'-2" MDPE MP | E PROSPECT | 027 | STA | 2019 | \$107,287.99 | \$213,288.34 | \$2,748.33 |
| PA EAST | 18024560000 | 1855722 | E HAMILTON AVE | 557 | INSTALL -580'-2" MDPE MP | E HAMILTON | 027 | STA | 2019 | \$51,143.31 | \$129,841.12 | \$37,936.51 |
| PA EAST | 18024562700 | 1855898 | 3RD ST CRITICAL VALVE | 559 | INSTALL 4" CRITICAL VALVE | 3RD ST | 133 | HAN | 2019 | \$24,915.81 | \$12,046.37 | |
| PA EAST | 18024564000 | 1856039 | MCKENZIE ST REPLACEMENT | 557 | OC-INSTALL -1000'-2" PMMP | MCKENZIE ST | 133 | YOR | 2019 | \$205,382.35 | \$521,709.38 | \$293,292.94 |
| PA EAST | 18024564401 | 1856046 | MAYWOOD ALDYL-A REPLACEMENT | 557 | REPLACE 960'-2" PMMP | MAYWOOD RD | 133 | YOR | 2019 | \$285,739.48 | \$222,217.07 | \$56,646.80 |
| PA EAST | 18024564600 | 1640112 | PM - AXEMANN POD REPLACEMENT | 559 | PM AXEMANN DISTRICT STATION | RISHELL HILL RD | 027 | BEL | 2018 | \$0.00 | \$1,824.29 | |
| PA EAST | 18024565600 | 1531769 | SNOWSHOE | 559 | PM - SNOWSHOE OUTLET MAIN | SNOWSHOE POD | 027 | CLA | 2018 | \$0.00 | \$0.00 | |
| PA EAST | 18024565900 | 1856232 | ALLEGHENY LUTHERAN COTTAGES RELOCATE | 561 | INSTALL -210'-6" PMMP | MCKEE CR | 027 | PLE | 2019 | \$16,964.86 | \$28,011.55 | |
| PA EAST | 18024568001 | 1856415 | GAS & PINE (CI) | 557 | INSTALL 3225'-2" PMMP | GAS AND PINE (CI) | 133 | YOR | 2019 | \$1,070,133.00 | \$815,393.09 | \$617,209.23 |
| PA EAST | 18024585000 | 1859122 | PENN ST - HAN | 557 | INSTALL 1535'-2" PMMP | PENN | 133 | HAN | 2019 | \$470,708.30 | \$294,959.83 | \$124,960.20 |
| PA EAST | 18024585900 | 1859154 | BAKERY PLACE | 557 | INSTALL 575'-4" PMMP | M | 001 | LIT | 2019 | \$116,742.13 | \$84,275.63 | \$16,995.50 |
| PA EAST | 18024586100 | 1859159 | 2421 - MANHEIM - REPL JO | 557 | REPLACE MAIN - LEAKAGE | MANHEIM ST | 133 | YOR | 2019 | \$340,911.54 | \$289,452.18 | \$114,906.12 |
| PA EAST | 18024592400 | 1858738 | S QUEEN ST ABANDON | 559 | INSTALL SST | S QUEEN ST | 133 | YOR | 2018 | \$3,436.39 | \$60.45 | |
| PA EAST | 18024592501 | 1859539 | GLENWYN | 559 | INSTALL 140'-PMLP | GLENWYN DR | 001 | LIT | 2019 | \$98,581.82 | \$126,502.56 | \$22,309.12 |
| PA EAST | 18024593700 | 1533303 | D10132 DREIBELBIS | 559 | INSTALL -1520'-6" MDPE MP | SHILOH RD | 027 | STA | 2019 | \$169,105.73 | \$273,059.49 | \$20,933.14 |
| PA EAST | 18024596500 | 1421494 | FREDERICK ST PH 2 | 557 | INSTALL 735'-4" PLP | FREDERICK | 133 | HAN | 2019 | \$8,979.66 | \$2,755.66 | |
| PA EAST | 18024598100 | 1860245 | 2421 - FREYSVILLE - REPL JO | 557 | REPLACE 75'-2" PMMP | 3091 FREYSVILLE RD | 133 | RED | 2019 | \$8,231.28 | \$89.13 | |
| PA EAST | 19021471200 | 1642439 | MERCERSBURG POD | 561 | PM - MERCERSBURG OUTLET | CLAY LICK RD | 055 | MER | 2018 | \$0.00 | \$0.00 | |
| PA EAST | 19021475200 | 1962257 | 4136 LINCOLN WAY E SERVICE REPLACEMENT | 557 | INSTALL 2-4" SHORTSTOPPS | 4136 LINCOLN | 055 | FAY | 2019 | \$5,644.21 | \$10,784.14 | |
| PA NORTH | 19022477700 | 1960776 | MIDDENDORF ALLY REPLACEMENT - BOYERS | 557 | INSTALL 1200'-2" PMMP | MIDDENDORF | 019 | BOY | 2019 | \$111,978.20 | \$149,404.82 | \$0.00 |
| PA NORTH | 19022480300 | 1853624 | W CORYDON STREET REPLACEMENT | 557 | INSTALL 805'-4",6" PMLP | ELM ST | 083 | BRA | 2019 | \$230,096.03 | \$4,851.70 | \$0.00 |
| PA NORTH | 19022483200 | 1961106 | MAPLE ST. REPLACEMENT | 557 | INST-60'-3"&4" PMMP | MAPLE | 031 | HAW | 2019 | \$46,732.32 | \$15,303.45 | \$0.00 |
| PA CENTRAL | 19022485200 | 1961306 | 2221 - WOODWARD - MCK ROCKS 600 BLOCK | 557 | LAY 780'-6"PLP, 100'-4"PLP | WOODWARD | 003 | MCK | 2019 | \$365,322.19 | \$249,483.63 | \$116,396.58 |
| PA NORTH | 19022486000 | 1961416 | PINE DRIVE LANDSLIDE ABANDONMENT | 557 | INSTALL 4" SHORTSTOPP FITTING | PINE DR | 003 | MOO | 2019 | \$7,188.08 | \$3,568.68 | |
| PA NORTH | 19022487300 | 1961417 | BOARDWALK RELOCATION | 561 | INSTALL 165'-4" PMMP | PARK LANE DR | 003 | PIT | 2019 | \$35,970.28 | \$146,171.31 | |
| PA NORTH | 19022489000 | 1961698 | CHERRY RUN RD REPLACEMENT | 557 | INSTALL 20'-6" CSHP | CHERRY RUN RD | 031 | RIM | 2019 | \$28,188.06 | \$61,499.06 | |
| PA NORTH | 19022490900 | 1746470 | 2ND STREET BEAVER AMRP | 557 | INSTALL 60'-6" PHHP | CORPORATION ST | 007 | BEA | 2019 | \$83,790.82 | \$78,927.58 | \$410.04 |
| PA NORTH | 19022491500 | 1960564 | SR 18 4" CSHP ABN | 557 | INSTALL 4" SHORTSTOP FOR ABN | SR 18 | 007 | BVR | 2019 | \$576.00 | \$145.10 | |
| PA NORTH | 19022495500 | 1962187 | ELIZABETH ST | 559 | INSTALL 75'-6" PMLP | ELIZABETH ST | 003 | SEW | 2019 | \$32,178.22 | \$42,713.16 | \$9,011.30 |
| PA CENTRAL | 19022498700 | 1856010 | GLENMORE REPLACEMENT PROJECT | 557 | INSTALL 379' 4" PMLP REPLACEMENT | GLENMORE | 003 | PIT | 2019 | \$56,886.43 | \$73,248.24 | \$5,487.98 |
| PA NORTH | 19022500901 | 1962384 | PENN AVE MP NEW BRIGHTON | 557 | INSTALL 4194' OF 2,4,6,&8"PMMP | PENN AV | 007 | N-B | 2019 | \$1,056,586.20 | \$754,169.67 | \$363,020.29 |

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|------------|-------------|---------|---------------------------------------|-----|--------------------------------|---------------------|-----|-----|------|----------------|----------------|--------------|
| PA NORTH | 19022503200 | 1635954 | SIX POINTS REGULATR REPLACEMENT | 557 | INST: 1,231'-8" PMMP | DUNKLE RD | 019 | EAU | 2019 | \$27,527.06 | \$27,433.07 | |
| PA NORTH | 19022503400 | 1635954 | SIX POINTS REGULATR REPLACEMENT | 557 | INSTALL 120'-HP STATION PIPING | DUNKLE RD | 019 | EAU | 2019 | \$5,928.55 | \$219,843.95 | |
| PA NORTH | 19022503600 | 1962915 | 17TH STREET REPLACEMENT | 557 | INSTALL 840'-6" PMMP | 17TH ST | 007 | BVR | 2019 | \$213,754.20 | \$252,625.72 | \$128,078.34 |
| PA NORTH | 19022505300 | 1850058 | CENTER AVE REPLACEMENT - AVALON | 557 | INSTALL 10'-8" PMLP | CENTER | 003 | PIT | 2019 | \$2,189.00 | \$0.00 | |
| PA NORTH | 19022505800 | 1963204 | 4TH AVE GC REPLACEMENT | 557 | INSTALL -732'4" PMMP | 4TH AV | 007 | BVR | 2019 | \$249,663.59 | \$358,426.16 | \$139,028.99 |
| PA CENTRAL | 19022506500 | 1749545 | SUNNYHILL | 557 | INSTALL 150'-6" PLP | MOHAWK | 003 | PIT | 2019 | \$81,903.61 | \$109,272.63 | \$1,237.60 |
| PA NORTH | 19022509100 | 1101114 | D-1395 REPLACEMENT | 559 | INSTALL -680' PMLP | W PITTSBURGH | 073 | N-C | 2019 | \$9,184.65 | \$47,451.63 | |
| PA NORTH | 19022509900 | 1962226 | ARCH STREET ABD | 561 | INSTALL 10' SHORT STOP | ARCH ST | 003 | COR | 2019 | \$0.00 | \$247.94 | |
| PA CENTRAL | 19022510600 | 1963945 | 2221 - WOODFORD - REPL JO | 557 | REPLACE MAIN - LEAKAGE | W WOODFORD | 003 | PIT | 2019 | \$35,916.29 | \$24,965.33 | \$7,579.96 |
| PA NORTH | 19022511501 | 1964003 | 16TH ST RELOCATION | 561 | INSTALL 100'-6" PMLP - PENNDOT | 16TH ST | 007 | N-B | 2019 | \$28,839.85 | \$14,525.22 | |
| PA NORTH | 19022511800 | 1964002 | SHERMAN ST BETTERMENT | 559 | INSTALL 1450'-4"PMMP | SHERMAN ST | 007 | AMB | 2019 | \$161,634.88 | \$135,250.68 | \$1,348.50 |
| PA CENTRAL | 19022512000 | 1964006 | 2221 - POPLAR - REPL JO | 557 | REPLACE 250' 4" PMLP | 1449 POPLAR ST | 003 | PIT | 2019 | \$31,893.03 | \$53,642.37 | \$17,749.24 |
| PA NORTH | 19022512300 | 1964024 | MCCANDLESS RD ABANDONMENT | 557 | INSTALL SHORT STOP | MCCANDLESS RD | 019 | SLI | 2019 | \$9,140.53 | \$8,561.46 | |
| PA CENTRAL | 19022514800 | 1964267 | BELLE ISLE REPLACEMENT | 557 | INSTALL 185'-2/4" PLP | BELLE ISLE AV | 003 | PIT | 2019 | \$91,601.56 | \$106,155.26 | \$61,875.07 |
| PA NORTH | 19022516100 | 1964159 | N JACKSON BETTERMENT FOR ASSUMPTION | 559 | LAY 60'-2" PMMP | N JACKSON | 003 | PIT | 2019 | \$23,323.49 | \$44,918.93 | \$19,693.42 |
| PA NORTH | 19022519200 | 1964708 | H ALY | 559 | LAY 150'-2" PMLP | H ALY | 003 | PIT | 2019 | \$22,895.24 | \$26,616.77 | \$13,095.85 |
| PA NORTH | 19022519900 | 1743355 | CASTEEL DRIVE REGULATOR REPLACEMENT | 559 | IN/OUT PIPING 125# SYSTEM | CASTEEL DR | 003 | COR | 2019 | \$22,585.03 | \$4,791.48 | |
| PA NORTH | 19022521500 | 1964827 | CHURCH AVE LEAKAGE REPLACEMENT | 557 | LAY 80'-6" PMLP | 7305 CHURCH AV | 003 | PIT | 2019 | \$48,660.24 | \$116,270.42 | \$41,655.50 |
| PA NORTH | 19022523800 | 1965072 | S.R.0058 REPLACEMENT | 557 | INSTALL -450'-4" PMMP - SR58 | ROUTE 58 | 031 | EML | 2019 | \$22,475.82 | \$16,756.34 | |
| PA CENTRAL | 19022524100 | 1965081 | 2221 - SEFLER - REPL JO | 557 | SEFLER MAIN REPLACEMENT | SEFLER | 003 | MCK | 2019 | \$2,481.35 | \$6,593.69 | |
| PA NORTH | 19022525300 | 1965123 | 2231 - 10TH - REPL JO | 557 | INSTALL MAIN DUE TO SERV LINE | 10TH ST | 007 | BVR | 2019 | \$30,891.03 | \$22,855.71 | \$2,596.90 |
| PA CENTRAL | 19022527100 | 1965258 | LINDA LN MT LEBO PROJECT | 557 | INST 30'-6"PLP | LINDA LN | 003 | PIT | 2019 | \$55,865.58 | \$44,763.83 | \$9,616.62 |
| PA NORTH | 19022531400 | 1965586 | D22 @ KAY RD | 557 | INSTALL -2500'-8" PHHP | KAY RD | 019 | HAR | 2019 | \$848,959.10 | \$855,627.67 | \$0.00 |
| PA CENTRAL | 19022531600 | 1965607 | TEXAS AVE RELOCATION | 561 | INSTALL 100'-2" PMLP | TEXAS AV | 003 | PIT | 2019 | \$26,619.06 | \$34,097.05 | \$0.00 |
| PA NORTH | 19022532100 | 1961744 | Twin Lakes | 561 | RELOCATE OC 100'-4"PMMP TWIN | MOODY RD | 003 | CLI | 2019 | \$27,158.23 | \$34,573.13 | \$5,887.50 |
| PA NORTH | 19022535800 | 1966000 | D-4005 PHASE 2 CARRYOVER | 557 | 8" SST TIE IN | D-4005 | 123 | SHE | 2019 | \$15,796.88 | \$11,094.33 | |
| PA CENTRAL | 19022538200 | 1966230 | 2984 SIDNEY STREET RELOCATION | 561 | 348'-2" PMMP INSTALL-RELOC | SIDNEY | 003 | PIT | 2019 | \$21,297.10 | \$30,923.75 | |
| PA NORTH | 19022540000 | 1966295 | WEAVER POD OUTLET LEG REPLACEMENT | 557 | REPLACE POD OUTLET - WEAVER | NINEVAH | 031 | KNO | 2019 | \$15,409.14 | \$16,622.32 | |
| PA CENTRAL | 19022540400 | 1966321 | COMANCHE RD MP | 557 | INSTALL 100'-4" PMMP | COMANCHE RD | 003 | BET | 2019 | \$26,972.49 | \$55,154.66 | \$0.00 |
| PA CENTRAL | 19022541400 | 1745920 | AMANDA AV REPLACEMENT (AC) | 557 | INSTALL -6'-4" PMLP | THIELMAN | 003 | PIT | 2019 | \$498.22 | \$571.20 | |
| PA CENTRAL | 19022542000 | 1966281 | BROWNSVILLE RD RELOCATION | 561 | RELOCATE 500' PLMP | 4025 BROWNSVILLE RD | 003 | SPA | 2019 | \$34,137.07 | \$182,070.10 | \$27,962.12 |
| PA NORTH | 19022544200 | 1640998 | FIFTH AVE REPLACEMENT-WARREN | 557 | 1' PMLP AND END CAP | POPLAR ST | 123 | WAR | 2019 | \$498.22 | \$0.00 | |
| PA NORTH | 19022544400 | 1961106 | MAPLE ST. REPLACEMENT | 557 | 1' PMLP AND END CAP | MAPLE ST | 031 | HAW | 2019 | \$498.22 | \$0.00 | |
| PA NORTH | 19022545900 | 1745670 | STATE STREET - BRADFORD | 557 | INST: 1' PMLP & END CAP | BENNETT ST | 083 | BRA | 2019 | \$585.43 | \$0.00 | |
| PA CENTRAL | 19022549200 | 1966960 | PNG BELTZHOOVER INTERCONNECT | 561 | INSTALL TEMP PNG INTERCONNECT | INDUSTRY | 003 | PIT | 2019 | \$3,276.60 | \$16,022.53 | |
| PA CENTRAL | 19022554200 | 1967339 | BRETT STREET REPLACEMENT | 557 | INSTALL 165' PMLP | BRETT | 003 | PIT | 2019 | \$26,818.79 | \$28,217.32 | \$3,178.19 |
| PA NORTH | 19022559000 | 1967494 | 11TH AVE LP JUMPER | 559 | INSTALL -186'-4" PMLP IN N-B | 11TH AV | 007 | N-B | 2019 | \$86,963.51 | \$38,129.04 | \$2,580.84 |
| PA NORTH | 19022559500 | 1642441 | LEWIS RUN POD REPLACEMENT | 559 | MP - LEWIS RUN OUTLET | SR 4001 | 083 | LEW | 2019 | \$0.00 | \$0.00 | |
| PA CENTRAL | 19022560600 | 1967557 | SOUTHCREST HP REPLACEMENT | 557 | INSTALL 4,205-4/8" PHHP | SOUTHCREST | 003 | PIT | 2019 | \$1,511,472.18 | \$1,492,568.54 | \$206,792.62 |
| PA CENTRAL | 19022562000 | 1967645 | 2221 - LEOLYN - REPL JO | 559 | REPLACE 100FT -4"PLP | LEOLYN ST | 003 | PIT | 2019 | \$46,544.30 | \$28,387.32 | \$958.93 |
| PA NORTH | 19022566400 | 1968109 | ATLANTICE AVE REPLACEMENT | 557 | INSTALL 570'-2"PLP | ATLANTIC AV | 073 | N-C | 2019 | \$64,099.37 | \$63,321.43 | \$2,888.80 |
| PA CENTRAL | 19022573600 | 1967317 | ARABELLA ABANDONMENT - CAT-U | 557 | INSTALL 50'-2" PLP | MARLAND | 003 | PIT | 2019 | \$47,494.07 | \$31,251.86 | \$0.00 |
| PA SOUTH | 19023785400 | 1960600 | 2321 - WASHINGTON MILLS - REPL JO | 557 | INSTALL 121' PMLP | WASHINGTON MILLS RD | 051 | PER | 2019 | \$15,151.99 | \$70,713.58 | \$33,792.31 |
| PA SOUTH | 19023785600 | 1857838 | PREMISE 0700368 EXTRA LP OPP | 557 | INSTALL 84' - 6" PLP | COUNTRY CLUB | 051 | UNI | 2019 | \$94,059.00 | \$58,463.46 | |
| PA CENTRAL | 19023788000 | 1961094 | DONNAN AVENUE REPLACEMENT PROJECT | 557 | LAY 630'-4"PMLP | DONNAN | 125 | WAS | 2019 | \$123,567.07 | \$196,205.71 | \$80,729.54 |
| PA SOUTH | 19023788200 | 1961102 | 2321 - SUSAN - REPL JO | 557 | INSTALL 3216'-2" PMMP | SUSAN | 129 | N H | 2019 | \$539,707.32 | \$362,093.80 | \$126,583.29 |
| PA SOUTH | 19023789700 | 1851832 | STATE ST PROJECT | 557 | INSTALL LP FITTINGS | STATE ST | 125 | CHA | 2019 | \$41,043.28 | \$8,106.63 | \$0.00 |
| PA SOUTH | 19023790900 | 1961363 | LOWBER RD PROJECT | 559 | INSTALL 1,515'-4" PMMP | LOWBER RD | 129 | SUT | 2019 | \$181,519.04 | \$129,813.38 | \$4,594.55 |
| PA CENTRAL | 19023793800 | 1961726 | OLD WASHINGTON RD REPLACEMENT PROJECT | 557 | INSTALL 1,310'-6" PMLP | OLD WASHINGTON RD | 125 | MCM | 2019 | \$260,922.53 | \$588,859.14 | \$159,846.41 |
| PA CENTRAL | 19023796700 | 1962106 | 2391 - BENNINGTON - REPL JO | 557 | INSTALL 2" 90 | BENNINGTON | 125 | CAN | 2019 | \$9,625.11 | \$10,330.37 | \$4,167.45 |
| PA CENTRAL | 19023800900 | 1962562 | PIZZA HUT RELOCATION | 561 | INSTALL 250'-4" PMMP | ADIOS DR | 125 | WAS | 2019 | \$13,139.28 | \$22,480.24 | |
| PA CENTRAL | 19023801600 | 1636023 | BROWNS CREEK REPLACEMENT PROJECT | 559 | LAY 5'-2"PMMP | BROWNS CREEK RD | 059 | NIN | 2019 | \$38,747.65 | \$51,269.57 | \$88.20 |
| PA CENTRAL | 19023807900 | 1963358 | 2391 - SUNRISE - REPL JO | 557 | DB 900'-2"PMMP | 70 SUNRISE DR | 125 | WAS | 2019 | \$72,793.62 | \$71,218.04 | \$3,403.98 |
| PA CENTRAL | 19023809300 | 1963460 | 2391 - SR 21 - REPL JO | 557 | INSTALL CL1876-101 & 1876-102 | SR 21 | 059 | WAY | 2019 | \$299.17 | \$563.19 | |
| PA CENTRAL | 19023810600 | 1963724 | 2391 - 2ND - REPL JO | 557 | LAY 390'-2"PMLP | 2ND | 125 | HOU | 2019 | \$34,575.07 | \$30,049.74 | \$2,572.32 |
| PA SOUTH | 19023813600 | 1964253 | 2321 - GREEN - REPL JO | 557 | INSTALL 240' OF 2" PLP | GREEN | 129 | JEA | 2019 | \$26,022.29 | \$41,778.99 | \$6,016.06 |
| PA CENTRAL | 19023814700 | 1964442 | 2391 - BRAUN - REPL JO | 557 | LAY 100'-4"PMLP | BRAUN | 125 | MCM | 2019 | \$27,386.39 | \$34,659.27 | \$6,940.54 |
| PA CENTRAL | 19023815200 | 1964551 | 2391 - OAK - REPL JO | 557 | LAY 220'-2"PMLP | OAK | 125 | CAN | 2019 | \$38,402.23 | \$29,734.92 | \$12,504.24 |

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|------------|-------------|---------|---------------------------------------|-----|---------------------------------|---------------------|-----|-----|------|--------------|--------------|--------------|
| PA CENTRAL | 19023816000 | 1743697 | SR 519 RELOCATION PROJECT | 561 | LAY 240'-6"PMMP | SR 519 | 125 | STR | 2019 | \$35,184.17 | \$196,618.09 | \$16,628.22 |
| PA SOUTH | 19023820200 | 1859535 | Paul Development | 557 | INST 785'-6"PMMP, 660'-4"PMMP | D- 8523 | 051 | UNI | 2019 | \$113,557.62 | \$78,494.31 | |
| PA SOUTH | 19023820600 | 1965255 | BROADWAY LAND SLIDE | 561 | INSTALL 205'-4" PMLP | BROADWAY AV | 129 | N H | 2019 | \$35,111.88 | \$29,858.12 | |
| PA CENTRAL | 19023822400 | 1965658 | MAYVIEW BETTERMENT PROJECT | 559 | LAY APPROX 329'-2" | MAYVIEW RD | 125 | CEC | 2019 | \$63,168.82 | \$46,740.12 | \$0.00 |
| PA SOUTH | 19023822700 | 1965467 | CAMPBELL LN - 40 N MAIN ST RR | 559 | INSTALL 140'-2"PMLP | CAMPBELL LN | 051 | FAI | 2019 | \$16,775.47 | \$13,647.52 | \$5,018.28 |
| PA SOUTH | 19023824200 | 1965662 | 608 SEWICKLEY AV | 559 | INSTALL 255'-2" PLP | 608 SEWICKLEY AV | 129 | HER | 2019 | \$20,953.82 | \$17,591.44 | \$0.00 |
| PA SOUTH | 19023824401 | 1965705 | UNION STREET | 561 | REPLACE 100'-4" PMLP | UNION | 111 | SOM | 2019 | \$12,947.82 | \$761.85 | |
| PA SOUTH | 19023825300 | 1857865 | PREMISE 0701280 EXTRA LP OPP | 559 | SMITHFIELD LP OPP PILOT | MAIN ST | 051 | SMI | 2019 | \$0.00 | \$50.19 | |
| PA SOUTH | 19023825500 | 1857865 | PREMISE 0701280 EXTRA LP OPP | 559 | SMITHFIELD LP OPP | MAIN ST | 051 | SMI | 2019 | \$0.00 | \$25.10 | |
| PA CENTRAL | 19023825700 | 1965903 | NOBLESTOWN RD RELOCATION PROJECT | 561 | DB 345'-6"PMLP | NOBLESTOWN | 003 | OAK | 2019 | \$75,860.62 | \$63,034.88 | \$0.00 |
| PA CENTRAL | 19023825900 | 1965903 | NOBLESTOWN RD RELOCATION PROJECT | 561 | LAY 300'-4"PMMP | NOBLESTOWN | 003 | OAK | 2019 | \$92,968.88 | \$266,125.43 | \$21,402.29 |
| PA SOUTH | 19023830600 | 1857838 | PREMISE 0700368 EXTRA LP OPP | 559 | PM - INLET PIPE TO 8232 | BARTON MILL | 051 | UNI | 2019 | \$0.00 | \$0.00 | |
| PA CENTRAL | 19023834200 | 1967043 | 111 WILHAVEN RD PROJECT | 559 | LAY 100'-2"PMMP | 111 WILLHAVEN RD | 125 | MCM | 2019 | \$18,598.22 | \$6,416.70 | |
| PA SOUTH | 19023836900 | 1967336 | 2321 - NEW SALEM - REPL JO | 557 | INSTALL -3'-1" PMMP | NEW SALEM RD | 051 | N S | 2019 | \$1,883.74 | \$0.00 | |
| PA CENTRAL | 19023837700 | 1967386 | JACKSON ST BETTERMENT PROJECT | 559 | LAY 210'-2"PMLP | JACKSON ST | 125 | HOU | 2019 | \$36,783.22 | \$13,407.94 | \$0.00 |
| PA SOUTH | 19023838000 | 1967458 | 811 FLORENCE STREET | 559 | INSTALL 20'-2" PMMP | 811 FLORENCE ST | 051 | LA | 2019 | \$5,273.45 | \$2,264.27 | |
| PA CENTRAL | 19023838600 | 1849913 | DEWEY AVE REPLACEMENT PROJECT | 557 | INSTALL PMLP | TRINITY | 125 | WAS | 2019 | \$899.86 | \$0.00 | |
| PA CENTRAL | 19023845500 | 1968282 | 2391 - FULTON - REPL JO | 557 | LAY 960'-2/4"PMLP | FULTON | 125 | WAS | 2019 | \$118,712.28 | \$91,042.77 | \$14,811.74 |
| PA CENTRAL | 19023848400 | 1968660 | INDIANA AVE REPLACEMENT | 557 | INSTALL 320'-2" PMLP | INDIANA | 125 | HOU | 2019 | \$21,839.30 | \$21,646.04 | \$8,490.63 |
| PA EAST | 19024600200 | 1960576 | 2421 - MAPLE - REPL JO | 557 | REPLACE MAIN - LEAKAGE | 431 W MAPLE ST | 133 | DAL | 2019 | \$395,576.56 | \$448,156.13 | \$224,880.40 |
| PA EAST | 19024600400 | 1960581 | HERRS RIDGE | 559 | INSTALL 2,050'-2" PMMP | HERRS RIDGE | 001 | GET | 2019 | \$310,268.14 | \$248,232.89 | \$16,754.10 |
| PA EAST | 19024600800 | 1960605 | CENTER MILLS CROSSBORE | 561 | INSTALL 15'-CSHP | 1499 CENTER MILLS | 001 | ASP | 2019 | \$14,113.20 | \$3,348.34 | \$2,234.40 |
| PA EAST | 19024601001 | 1746870 | DD BENNER PK | 559 | INSTALL -825'-4" MDPE MP | BENNER PIKE | 027 | BEL | 2019 | \$90,753.90 | \$77,709.10 | \$1,506.96 |
| PA EAST | 19024601500 | 1960694 | 2421 - TABLE ROCK - REPL JO | 557 | INST 1010'-4" PMLP | TABLE ROCK | 001 | BIG | 2019 | \$210,041.35 | \$222,600.60 | \$6,134.52 |
| PA EAST | 19024601901 | 1960711 | WINTERSTOWN RD | 557 | OC-INSTALL -1620'-2" PMMP | WINTERSTOWN RD | 133 | WIN | 2019 | \$305,568.54 | \$620,303.28 | \$659,919.45 |
| PA EAST | 19024603100 | 1960907 | BOARD RD RELOCATION | 561 | INSTALL 590'-6" PMMP | BOARD RD | 133 | MAN | 2019 | \$151,486.88 | \$222,944.62 | \$20,265.00 |
| PA EAST | 19024605801 | 1961340 | OLD HARRISBURG RD | 561 | RELOCATE 40'-4" CSHP | 880 HARRISBURG RD | 001 | GET | 2019 | \$99,997.56 | \$109,448.62 | |
| PA EAST | 19024610601 | 1962255 | STONE POINT | 557 | RELOCATE 718'-6" PMMP | STONE POINT | 001 | NOX | 2019 | \$175,903.23 | \$297,378.33 | \$99,816.40 |
| PA EAST | 19024614600 | 1962385 | 2421 - GUY - REPL JO | 561 | REPLACE MAIN - LEAKAGE | 195 GUY ST | 133 | HEL | 2019 | \$81,822.12 | \$103,329.66 | \$43,279.94 |
| PA EAST | 19024617100 | 1960866 | SUSQUEHANNA TRL | 559 | INSTALL FITTING | 5800 SUSQUEHANNA RD | 133 | YOR | 2019 | \$2,075.79 | \$0.00 | |
| PA EAST | 19024618300 | 1962715 | FRANK RD - I-83 CROSSING | 557 | REPLACE MAIN - LEAKAGE | FRANK | 133 | STE | 2019 | \$228,375.23 | \$290,550.58 | \$14,331.80 |
| PA EAST | 19024621000 | 1963056 | OCKER AVE | 557 | INST 500'-6" PMMP | OCKER | 001 | LIT | 2019 | \$98,247.85 | \$264,039.84 | \$283,496.40 |
| PA EAST | 19024622900 | 1963361 | 2421 - FREDERICK - REPL JO | 557 | INSTALL 165'-2"PMMP, 10'-2"CS | FREDERICK | 133 | DAL | 2019 | \$23,958.54 | \$75,885.40 | \$15,801.12 |
| PA EAST | 19024628201 | 1963687 | GRANDVIEW RD | 561 | INSTALL 365'-2" PMMP | GRANDVIEW | 133 | HAN | 2019 | \$142,510.60 | \$158,063.61 | \$667.08 |
| PA EAST | 19024635000 | 1964691 | LIGHTNER & BEAVER LEAK | 557 | REPLACE 40'-4" PMMP | LIGHTNER | 133 | YOR | 2019 | \$22,336.65 | \$14,105.21 | \$2,290.92 |
| PA EAST | 19024636000 | 1964788 | 2421 - FRANKLIN - REPL JO | 557 | INSTALL -450'-2' & 950'-4" PMMP | FRANKLIN | 133 | NFR | 2019 | \$245,600.82 | \$412,934.42 | \$20,411.34 |
| PA EAST | 19024638200 | 1964929 | ACCOMAC REPAIR | 557 | REPLACE MAIN - LEAKAGE | 556 ACCOMAC | 133 | HEL | 2019 | \$22,560.21 | \$3,191.47 | |
| PA EAST | 19024641801 | 1965156 | 7 CHERRY ALLEY | 559 | INSTALL 3" SS FTG. | 7 CHERRY ALLEY | 133 | NFR | 2019 | \$7,829.69 | \$6,651.74 | \$0.00 |
| PA EAST | 19024645600 | 1965673 | N HILLS PENNDOT RELOCATE (SR 2003) | 561 | ECMS 110054 N HILLS RELOCATE | N HILLS | 133 | YOR | 2019 | \$91,210.32 | \$167,165.63 | \$28,777.58 |
| PA EAST | 19024645800 | 1533037 | York Co Fire Schl Natural Gas | 559 | INST 1'4"PMMP AND SVC CONNECT | 330 EMIG RD | 133 | YOR | 2019 | \$11,799.44 | \$12,745.66 | |
| PA EAST | 19024646000 | 1965707 | BOARD RD RELOCATION | 561 | BOARD RD RELOCATE | BOARD RD | 133 | MAN | 2019 | \$26,181.76 | \$189,438.68 | \$49,638.96 |
| PA EAST | 19024649200 | 1965983 | PLEASANT AND NEW SCHOOL | 557 | PENNDOT-INSTALL 1,005'-2" | PLEASANT | 133 | DAL | 2019 | \$216,065.41 | \$221,910.41 | \$202,522.30 |
| PA EAST | 19024649400 | 1965987 | CHELLENHAM RD | 559 | INSTALL 580'-2" PMMP | 3684 CHELTENHAM RD | 133 | YOR | 2019 | \$42,431.92 | \$25,743.43 | \$1,235.07 |
| PA EAST | 19024650200 | 1640121 | LITTLESTOWN HIGH PRESSURE REPLACEMENT | 559 | INSTALL 80'-8" PMMP | BASEHOAR SCHOOL | 001 | LIT | 2019 | \$30,500.70 | \$44,351.39 | |
| PA EAST | 19024653400 | 1966682 | LOGAN'S RESERVE | 559 | OC & INSTALL 8'-4"PMMP | 533 COUNTRYSIDE RD | 133 | YOR | 2019 | \$9,739.04 | \$16,389.13 | |
| PA EAST | 19024656600 | 1746314 | W HANOVER ST. | 557 | LP JUMPER INSTALL | W HANOVER | 133 | HAN | 2019 | \$3,193.44 | \$2,759.07 | |
| PA EAST | 19024660900 | 1853683 | RUTH AVE | 557 | INSTALL 130' OF 4'6" PMMP | EICHELBERGER | 133 | HAN | 2019 | \$6,951.00 | \$1,969.52 | |
| PA EAST | 19024661200 | 1967718 | 2421 - FERN - REPL JO | 557 | INST SS ON FERN PL 6"CSLP | FERN PL | 133 | YOR | 2019 | \$21,710.43 | \$281.80 | |
| PA EAST | 19024661500 | 1742833 | 2421 - ATLANTIC - REPL JO | 557 | REPLACE 258'-4&6" PMLP | ATLANTIC AV | 133 | YOR | 2019 | \$0.00 | \$3,446.76 | |
| PA EAST | 19024662200 | 1747265 | Memorial Field - SCASD | 559 | INSTALL -100'-2" MDPE MP | MEMORIAL FIELD | 027 | STA | 2019 | \$9,608.26 | \$18,644.55 | |
| PA EAST | 19024663800 | 1968209 | E MARKET ST | 559 | CUT OUT SERVICE T | E MARKET ST | 133 | YOR | 2019 | \$6,119.01 | \$19,948.68 | \$5,326.50 |
| PA EAST | 19024667500 | 1533303 | D10132 DREIBELBIS | 559 | MP - DREIBELBIS RD PLAS INST | DREIBELBIS RD | 027 | STA | 2019 | \$0.00 | \$221.90 | |
| PA EAST | 19024669900 | 1744901 | NORTH ST REPLACEMENT | 557 | INSTALL 60'-6" PLP | CHESTNUT ST | 133 | HAN | 2019 | \$2,322.00 | \$270.21 | |
| PA CENTRAL | 20022594100 | 1635352 | BRENTVIEW DRIVE REPLACEMENT | 557 | INSTALL 120'-2" PMLP | MISSIONARY | 003 | PIT | 2019 | \$0.00 | \$2,518.32 | |

I&E Statement No. 5
Witness: Kokou M. Apetoh

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Direct Testimony

of

Kokou M. Apetoh

Bureau of Investigation & Enforcement

Concerning:

Distribution Integrity Management Plan
Leaks/Risk Reduction

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INTRODUCTION..... 1

FEDERAL AND STATE REGULATIONS..... 2

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
3 **ADDRESS.**

4 A. My name is Kokou M. Apetoh. I am a Fixed Utility Valuation Engineer in the
5 Pipeline Safety Division of the Pennsylvania Public Utility Commission’s Bureau
6 of Investigation and Enforcement (“I&E”). My business address is 400 North
7 Street, Harrisburg, Pennsylvania 17120.

8
9 **Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT EXPERIENCE?**

10 A. I attended the Pennsylvania State University and earned a Bachelor of Science in
11 Electrical Engineering in 2004. I joined I&E in July 2012.

12
13 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY FOR I&E?**

14 A. Yes. I have previously testified as a witness for I&E including in the 2016
15 Columbia Gas of Pennsylvania, Inc. (“Columbia” or “Company”) base rate case at
16 Docket No. R-2016-2529660.

17
18 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

19 A. The purpose of my testimony is to address Columbia’s Distribution Integrity
20 Management Plan (“DIMP”) and risk reduction. Additionally, this testimony will
21 focus on Columbia’s leaks, facility damages, and incidents as related to the DIMP.

1 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

2 A. Yes. I&E Exhibit No. 5 contains schedules related to my testimony.

3

4 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

5 A. I&E is responsible for protecting the public interest in proceedings before the
6 Commission. The I&E analysis in the proceeding is based on its responsibility to
7 represent the public interest. This responsibility requires balancing the interests of
8 the ratepayers, the regulated utility, and the regulated community as a whole.

9

10 **FEDERAL AND STATE REGULATIONS**

11 **Q. WHAT FEDERAL AND STATE REGULATIONS ARE CONTROLLING,**
12 **REGARDING COLUMBIA'S PIPELINE REPLACEMENT?**

13 A. Please see I&E Witness Niambele's Statement No. 4, which addresses Columbia's
14 pipeline replacement program.

15

16 **Q. WHY MUST A NATURAL GAS DISTRIBUTION COMPANY COMPLY**
17 **WITH THE DIMP REGULATIONS?**

18 A. Please see I&E Witness Niambele's Statement No. 4.

19

20 **Q. WHAT ARE THE REQUIREMENTS OF DIMP?**

21 A. Please see I&E Witness Niambele's Statement No. 4.

1 **Q. PLEASE DESCRIBE HOW COLUMBIA CLASSIFIES LEAKS ON ITS**
2 **SYSTEM.**

3 A. Columbia assigns grades or types to leaks on its system according to the severity
4 of the leaks. These assignments include grade 1, grade 2, and grade 3, with grade 1
5 being the most severe or hazardous. The Company deems grades 2, and 3 leaks as
6 non-hazardous leaks. Hazardous leaks require prompt action to protect life and
7 property and continuous action until the conditions are no longer hazardous.¹
8

9 **Q. HOW HAVE COLUMBIA’S LEAKS TRENDED FROM 2015 TO 2019?**

10 A. In response to I&E-GS-3, the Company provided information on leaks.² For the
11 period 2015 through 2019, Columbia’s overall trend for leaks was downward with
12 5,610 total leaks found in 2015 and 4,735 total leaks found in 2019.³ However,
13 for the period 2017 through 2019, leaks found trended upward with 4,363 total
14 leaks found in 2017 and 4,735 total leaks found in 2019, which is an 8.5%
15 increase.⁴

16 The Company’s grade 2 leaks, which Columbia categorizes as high risk,
17 follow the same trend as the total leaks, trending downward from 2015 to 2019⁵
18 but upward from 2017 to 2019⁶. Specifically, the total number of grade 2 leaks

¹ Columbia Statement No. 7, page 10, lines 19-21 and page 11, lines 1-4.

² I&E Exhibit No. 5, Schedule No. 1.

³ I&E Exhibit No. 5, Schedule No. 3.

⁴ I&E Exhibit No. 5, Schedule No. 4.

⁵ I&E Exhibit No. 5, Schedule No. 5.

⁶ I&E Exhibit No. 5, Schedule No. 6.

1 found decreased 21.96% from 2015 to 2019 going from 3,001 to 2,342.⁷
2 However, from 2017 to 2019, the Company's grade 2 leaks found increased
3 approximately 3% as they went from 2,280 in 2017 to 2,342 in 2019.⁸

4 The Company's grade 3 leaks also increased 32.71% from 2015 to 2019
5 going from 960 in 2015 to 1,274 in 2019. From 2017 to 2019, Columbia's grade 3
6 leaks increased 33.54% going from 954 in 2017 to 1,274 in 2019.⁹

7 In terms of leaks per mile of priority pipe, Columbia's leaks increased
8 9.69% from 2015 to 2019 or from 3.88 leaks per mile in 2015 to 4.26 leaks per
9 mile in 2019. For the period 2017 to 2019, the Company's leaks increased 6.83%
10 from 2017 to 2019 or from 3.98 leaks per mile in 2017 to 4.26 leaks per mile in
11 2019.¹⁰

12
13 **Q. HOW DID YOU DETERMINE THE NUMBER OF LEAKS PER MILE**
14 **FOR PRIORITY PIPES?**

15 A. I used the data in Columbia's PHMSA annual reports, which the Company
16 provided in response to I&E-GS-17¹¹ and the annual leaks found the Company
17 provided in response to I&E-GS-3.¹²

⁷ I&E Exhibit No. 5, Schedule No. 5.

⁸ I&E Exhibit No. 5, Schedule No. 6.

⁹ I&E Exhibit No. 5, Schedule No. 2.

¹⁰ I&E Exhibit No. 5, Schedule No. 8.

¹¹ I&E Exhibit No. 5, Schedule No. 7.

¹² I&E Exhibit No. 5, Schedule No. 1.

1 **Q. DID ANY COMPANY WITNESS PROVIDE TESTIMONY ON**
2 **COLUMBIA’S PIPELINE REPLACEMENT?**

3 A. Yes, Columbia witnesses Huwar¹³, Davidson¹⁴, and Kitchell¹⁵ each discuss the
4 Company’s plans for pipeline replacement. I&E witness Niambele discusses
5 Columbia’s pipeline replacement program in I&E Statement No. 4.
6

7 **Q. HAVE YOU REVIEWED HOW COLUMBIA EVALUATES RISKS TO ITS**
8 **SYSTEM?**

9 A. Yes. The Company uses both its DIMP and Optimain software to assess system
10 risks, and I have reviewed the Company’s risk rankings for its system risks that
11 are categorized as high, medium, or low depending on severity. The Company is
12 currently implementing the Safety Management System (“SMS”) to better identify
13 and mitigate risks to its system.¹⁶
14

15 **Q. CAN THE COMPANY’S RISKIEST ASSET GROUPS BE COMPARED**
16 **OVER THE YEARS?**

17 A. No. Columbia changed its risk model in 2017 but has yet to normalize risk
18 ranking scores between data driven results and Subject Matter Expert issued data.

¹³ Columbia Statement No. 1, pages. 8-17.

¹⁴ Columbia Statement No. 7, pages. 3-34.

¹⁵ Columbia Statement No. 14, pages. 3-21.

¹⁶ Columbia Statement No. 7, page 27, lines 7-8.

1 For those reasons, it is not possible to compare the Company's riskiest asset
2 groups over the years.

3
4 **Q. HAS THE OVERALL RISK SCORE FOR COLUMBIA'S SYSTEM BEEN**
5 **DECREASING OVER THE YEARS?**

6 A. Columbia tracks the progress of its risk reduction program by gauging several key
7 risk factors including open grade 2 leaks and the inventory of bare steel and cast-
8 iron pipes in its system.¹⁷ Columbia reduced its open grade 2 leaks by 64.14%
9 from 2015 to 2019. The Company had 937 open grade 2 leaks in 2015 and 336
10 open grade 2 leaks in 2019.

11 However, from 2017 to 2019, other risk indicators have risen thus
12 outweighing Columbia's risk reduction efforts. These risk indicators include the
13 number of newly found leaks, excavation damages per thousand tickets, poor
14 record related damages, non-reportable incidents due to poor records, and failures
15 of field-assembled risers on Columbia-owned service lines.

16
17 **Q. WHAT IS YOUR RECOMMENDATION REGARDING COLUMBIA'S**
18 **RISK REDUCTION?**

19 A. First, I recommend that Columbia should follow its DIMP plan to meet federal and
20 state mandates. Additionally, I recommend the Company focus specifically on the
21 other risk indicators that have risen from 2017 to 2019, which I mentioned above

¹⁷ I&E Exhibit No. 5, Schedule No. 9, page 1.

1 and further develop next. I also recommend the Company develop a process and
2 procedure to normalize the two different risk ranking systems it uses so the
3 effectiveness of the DIMP plan can be evaluated. By using high, medium, and
4 low as qualitative categories instead of quantitative risk scores, the PUC is unable
5 to tell if the Company's highest risks are being addressed first. Furthermore, I
6 recommend the Company conduct risk rankings with its historical data prior to
7 2016 to better evaluate trends and changes in risks to its system. Moreover, I
8 recommend Columbia update Section 7.1.2.2 of its DIMP Plan to reflect the
9 inclusion of historical data in the evaluation of its risks.

10
11 **Q. HOW HAVE COLUMBIA'S EXCAVATION DAMAGES PER 1,000**
12 **TICKETS TRENDED FROM 2015 TO 2019?**

13 A. For the period 2015 through 2019, Columbia's facility damages per 1,000 tickets
14 trended downward. The Company reported 2.45 damages per 1,000 tickets in
15 2015 and 1.97 damages per 1,000 tickets in 2019, a 19.6% decrease.¹⁸ However,
16 for the period 2017 through 2019, facility damages per 1,000 tickets trended
17 upward with a 2.6% increase. Specifically, in 2017, Columbia's facility damages
18 per 1,000 tickets were 1.92 while in 2019, the Company had 1.97 total facility
19 damages per 1,000 tickets.¹⁹

¹⁸ I&E Exhibit No. 5, Schedule No. 11.

¹⁹ I&E Exhibit No. 5, Schedule No. 12.

1 **Q. HOW DID YOU DETERMINE THE NUMBER OF FACILITY DAMAGES**
2 **PER 1,000 TICKETS?**

3 A. I divided the total number of main and service line excavation hits by the total
4 number of tickets received by Columbia through the Pennsylvania One Call
5 System and multiplied the quotient by 1,000. Columbia provided this data in
6 response to I&E-GS-5.²⁰

7
8 **Q. HAVE YOU REVIEWED THE COMPANY'S FACILITY DAMAGES**
9 **RELATED TO MAPPING ERRORS FROM 2015 TO 2019?**

10 A. Yes. I have reviewed Columbia's facility damages related to mapping errors,
11 which the Company provided in response to I&E-GS-6.²¹

12
13 **Q. HOW HAVE COLUMBIA'S FACILITY DAMAGES DUE TO MAPPING**
14 **ERRORS TRENDED FROM 2015 TO 2019?**

15 A. For the period 2015 through 2019, Columbia's facility damages related to
16 mapping errors per 1,000 tickets rose 6.4% from 0.149 in 2015 to 0.158 in 2019.²²
17 From 2017 through 2019, facility damages due to mapping errors per 1,000 tickets
18 decreased 6.8% from 0.170 in 2017 to 0.158 in 2019.²³

²⁰ I&E Exhibit No. 5, Schedule No. 10.

²¹ I&E Exhibit No. 5, Schedule No. 13, pages 1-2.

²² I&E Exhibit No. 5, Schedule No. 14.

²³ I&E Exhibit No. 5, Schedule No. 15.

1 **Q. HOW HAVE COLUMBIA’S FACILITY DAMAGES DUE TO POOR**
2 **RECORDS TRENDED FROM 2015 TO 2019?**

3 A. From 2015 through 2019, Columbia’s facility damages due to poor records
4 trended downward going from 0.297 in 2015 to 0.241 in 2019, an 18.86%
5 decrease.²⁴ For the period 2017 through 2019 on the other hand, Columbia’s
6 facility damages due to poor records trended upward as they went from 0.210 in
7 2017 to 0.241 in 2019, a 14.76% increase.²⁵

8
9 **Q. HOW HAVE COLUMBIA’S FACILITY DAMAGES CAUSED BY**
10 **UNMARKED FACILITIES TRENDED FROM 2015 TO 2019?**

11 A. From 2015 through 2019, Columbia’s facility damages caused by unmarked
12 facilities trended downward going from 0.210 in 2015 to 0.137 in 2019, a 34.76%
13 decrease.²⁶ For the period 2017 through 2019, Columbia’s facilities damages due
14 to unmarked facilities remained unchanged at 0.137.²⁷ Unmarked facilities, or
15 failure to mark these facilities is the fault of Columbia because under the PA One
16 Call Law²⁸, and 49 CFR §192.614²⁹, pipeline facility owners are responsible for
17 ensuring that their facilities are properly marked.

²⁴ I&E Exhibit No. 5, Schedule No. 16.

²⁵ I&E Exhibit No. 5, Schedule No. 17.

²⁶ I&E Exhibit No. 5, Schedule No. 18.

²⁷ I&E Exhibit No. 5, Schedule No. 19.

²⁸ PA's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 50 of 2017 (the "Act"), Section 2 (5)(i).

²⁹ 49 CFR §192.614 (C)(5)

1 **Q. HOW MUCH DID THE COMPANY SPEND ON DAMAGES THAT WERE**
2 **COLUMBIA’S FAULT FROM 2015 THROUGH 2019?**

3 A. Data Columbia provided in response to I&E-GS-23³⁰ indicates that the Company
4 spent \$906,776 on damages that were the Company’s fault from 2015 through
5 2019.³¹ The Company’s spending on damages that were Columbia’s fault
6 increased 35.30% from 2015 through 2019 or from \$159,714 in 2015 to \$216,100
7 in 2019. From 2017 through 2019, Columbia’s spending on damages that were
8 the Company’s fault increased 42.42% or from \$151,735 in 2017 to \$216,100 in
9 2019.³²

10
11 **Q. HOW MUCH DID THE COMPANY BILL CONTRACTORS FOR THIRD-**
12 **PARTY AT-FAULT DAMAGES FROM 2015 THROUGH 2019?**

13 A. The Company’s response to I&E-GS-23 shows that from 2015 to 2019, Columbia
14 billed contractors \$1,731,377 for third-party at-fault damages.³³ That includes,
15 \$433,271 in 2015, \$341,157 in 2016, \$267,650 in 2017, \$300,484 in 2018, and
16 \$388,815 in 2019.³⁴

³⁰ I&E Exhibit No. 5, Schedule No. 20, pages 1-2.
³¹ I&E Exhibit No. 5, Schedule No. 21, page 1, line 1, column H.
³² I&E Exhibit No. 5, Schedule No. 21, page 1, lines 1.
³³ I&E Exhibit No. 5, Schedule No. 21, page 1, line 2, column H.
³⁴ I&E Exhibit No. 5, Schedule No. 21, page 1, line 2, columns C-G.

1 **Q. HOW MUCH MONEY DID THE COMPANY RECEIVE FOR THIRD-**
2 **PARTY AT-FAULT DAMAGES FROM 2015 THROUGH 2019?**

3 A. The Company indicated in response to I&E-GS-23 that it received \$1,218,046
4 from 2015 through 2019 for third-party at-fault damages.³⁵ From 2017 through
5 2019, Columbia received \$787,936 for third-party at-fault damages.³⁶

6
7 **Q. HOW HAVE COLUMBIA'S NON-REPORTABLE INCIDENTS CAUSED**
8 **BY POOR RECORDS TRENDED FROM 2015 TO 2019?**

9 A. From 2015 to 2019, Columbia's non-reportable incidents caused by poor records
10 trended upward going from 51 in 2015 to 58 in 2019, a 13.73% increase.³⁷ From
11 2017 to 2019, the Company's non-reportable incidents caused by poor records
12 went up from 47 in 2017 to 58 in 2019, a 23.40% increase.³⁸

13
14 **Q. HOW HAVE COLUMBIA'S FAILED FIELD-ASSEMBLED RISERS**
15 **TRENDED FROM 2015 TO 2019?**

16 A. A riser is a section of pipe that connects fuel lines and meter sets. Field-assembled
17 risers are risers that are assembled in the field by Company employees as opposed
18 to factory assembled risers. Riser failures can lead to leaks resulting in
19 explosions, deaths, or property damages. Information provided by Columbia in

³⁵ I&E Exhibit No. 5, Schedule No. 21, page 1, line 3, column H.

³⁶ I&E Exhibit No. 5, Schedule No. 21, page 1, line, 3, columns E-G.

³⁷ I&E Exhibit No. 5, Schedule No. 23.

³⁸ I&E Exhibit No. 5, Schedule No. 24.

1 response to I&E-GS-7 shows the following concerning failed field assembled
2 risers.³⁹ From 2015 through 2019, Columbia's failed field-assembled risers
3 increased 100.00% from 24 in 2015 to 48 in 2019.⁴⁰ From 2017 to 2019, the
4 Company's failed field-assembled risers increased 4.35% from 46 in 2017 to 48 in
5 2019.⁴¹ In my opinion, the period 2017 through 2019 is more representative of the
6 Company's current conditions.

7
8 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING**
9 **COLUMBIA'S FAILED FIELD-ASSEMBLED RISERS?**

10 A. Yes. I recommend the Company complete updating its records, which will allow
11 Columbia to identify the locations of all field-assembled risers including those on
12 customer-owned service lines. Additionally, I recommend Columbia complete the
13 inspection of all field-assembled risers in the Company's system as soon as
14 possible. Furthermore, I recommend Columbia develop a plan to replace all of the
15 field-assembled risers in its system, including those on customer-owned service
16 lines.

17
18 **Q. DO YOU HAVE ANY RECOMMENDATION REGARDING COLUMBIA'S**
19 **LEAKS?**

20 A. Yes. I recommend that Columbia perform a root cause analysis to determine why

³⁹ I&E Exhibit No. 5, Schedule No. 25, pages 1-2.

⁴⁰ I&E Exhibit No. 5, Schedule No. 26.

⁴¹ I&E Exhibit No. 5, Schedule No. 27.

1 the number of leaks found does not correlate with the amount of pipeline
2 replacement for the past four years. Further, I recommend that Columbia present
3 the results of the said analysis to I&E Pipeline Safety, to include any corrective
4 actions the Company takes, no later than September 30th, 2021. Further, I
5 recommend Columbia continue its leakage reduction program.

6
7 **Q. WHY DO YOU RECOMMEND COLUMBIA COMPLETE A ROOT**
8 **CAUSE ANALYSIS REGARDING THE UPWARD TREND OF LEAKS ON**
9 **ITS SYSTEM?**

10 A. The upward trend of Columbia's leaks over the past four years is concerning given
11 the amount of priority pipe the Company is replacing.⁴² Theoretically, as risky
12 pipes are replaced, the number of leaks found should go down, which is not the
13 case here. Second, 2016 through 2019 constitutes the longest stretch since 2007
14 that the Company's leaks have not trended downward.⁴³ Third, a root cause
15 analysis will be a good investment of ratepayers' money given the threats that
16 leaks pose to lives and properties.

17
18 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING**
19 **COLUMBIA'S FACILITY DAMAGES?**

20 A. Yes. I recommend the Company finish updating its maps and records by the end

⁴² See Figure 4 on page 19 of Columbia Statement No. 1.

⁴³ See Figure 4 on page 19 of Columbia Statement No. 1.

1 of 2021 if the Commission approves its request for an additional O&M cost of
2 \$491,000. The Company should provide documentation of the completion of the
3 update to I&E Pipeline Safety no later than June 30th, 2022. Furthermore, I
4 recommend that Columbia use its senior operators and damage prevention staff to
5 tailor training programs that better suit Columbia's needs. Moreover, I
6 recommend that Columbia train its locating personnel, including third-party
7 contractors, on the same locating equipment used in the field.

8
9 **Q. PROVIDE THE BASIS FOR YOUR RECOMMENDATIONS.**

10 A. My recommendation is based on the increase of 23.40% between 2017 and 2019
11 of mapping errors and poor records. Also, Columbia's employees' errors resulted
12 in 136 total non-reportable incidents between 2015 and 2019.⁴⁴ Finally, Columbia
13 categorizes human errors as high risk to its system and personnel training should
14 reduce or eliminate that risk. Moreover, the increasing number of failed field-
15 assembled risers is a testament to the importance of personnel training.

16
17 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

18 A. Yes.

⁴⁴ I&E Exhibit No. 5, Schedule No. 22.

I&E Exhibit No. 5
Witness: Kokou M. Apetoh

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COLUMBIA GAS OF PENNSYLVANIA, INC.

Docket No. R-2020-3018835

Exhibit to Accompany

The

Direct Testimony

Of

Kokou M. Apetoh

Bureau of Investigation and Enforcement

Concerning:

Distribution Integrity Management Plan (DIMP)
Leaks/Risk Reduction

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-003:

Reference system leakage on page 34 of Columbia Gas Statement No. 7. For each year from 2015 through 2019.

- A. Provide a schedule showing the total leaks found and repaired on mains by leak type and pipe material;
- B. Provide a schedule showing the total leaks found and repaired on services by leak type and pipe material;
- C. Provide a schedule showing the company's current total leaks on mains by leak type and pipe material; and
- D. Provide a schedule showing the company's current total leaks on services by leak type and pipe material.

Response:

- See Table 1 below for the total number of leaks found by probable leak source and leak type. Please note pipe material is captured at the time the leak is cleared, not found.

Question No. I&E-GS-003
 Respondent: M. Davidson
 Page 2 of 2

Table 1

| Count of Leaks | | 2015 | 2016 | 2017 | 2018 | 2019 |
|------------------------------|-------------------|--------------|--------------|--------------|--------------|--------------|
| Mains | 1 | 365 | 278 | 255 | 343 | 308 |
| | 2 | 2,006 | 1,495 | 1,504 | 1,360 | 1,536 |
| | 2+ | 441 | 323 | 315 | 313 | 314 |
| | 3 | 673 | 520 | 715 | 649 | 801 |
| | Leak Grade | 3,485 | 2,616 | 2,789 | 2,665 | 2,959 |
| Service | 1 | 414 | 375 | 330 | 377 | 327 |
| | 2 | 979 | 805 | 761 | 685 | 758 |
| | 2+ | 346 | 248 | 190 | 242 | 148 |
| | 3 | 281 | 184 | 237 | 207 | 438 |
| | Leak Grade | 2,020 | 1,612 | 1,518 | 1,511 | 1,671 |
| Station Piping/Meter Setting | 1 | 77 | 67 | 37 | 22 | 18 |
| | 2 | 16 | 10 | 15 | 39 | 48 |
| | 2+ | 6 | 1 | 2 | 3 | 4 |
| | 3 | 6 | 1 | 2 | 1 | 35 |
| | Leak Grade | 105 | 79 | 56 | 65 | 105 |
| Total | 1 | 856 | 720 | 622 | 742 | 653 |
| | 2 | 3,001 | 2,310 | 2,280 | 2,084 | 2,342 |
| | 2+ | 793 | 572 | 507 | 558 | 466 |
| | 3 | 960 | 705 | 954 | 857 | 1,274 |
| | Leak Grade | 5,610 | 4,307 | 4,363 | 4,241 | 4,735 |

- See I&E-GS-003 Attachment A for the total number of leaks cleared by clearance code, leak type and material.
- See Table 2 below for the current total number of leaks by probable leak source and leak type. Please note pipe material is captured at the time the leak is cleared, not found.

Table 2

| Count of Leaks | | OPEN |
|------------------------------|-------------------|--------------|
| Mains | 2 | 441 |
| | 2+ | 2 |
| | 3 | 3,295 |
| | Leak Grade | 3,738 |
| | | |
| Service | 2 | 286 |
| | 2+ | 4 |
| | 3 | 1,098 |
| | Leak Grade | 1,388 |
| | | |
| Station Piping/Meter Setting | 2 | 4 |
| | 3 | 38 |
| | Leak Grade | 42 |
| Probable Leak Source | 2 | 731 |
| | 2+ | 6 |
| | 3 | 4,431 |
| | Leak Grade | 5,168 |
| | | |

** Current total number of leaks as of June 15, 2020.

I&E Exhibit No. 5
Schedule No. 1
Page 3 of 8

| Count of Leaks | | | 2015 | 2016 | 2017 | 2018 | 2019 | |
|------------------------------|--------------------------|----------------------|----------------------|----------|-----------|-----------|-----------|--|
| Reclassified with Repair | 1 | STEEL | | | | 3 | 3 | |
| | | Pipe Material | | | | 3 | 3 | |
| | 2 | PLASTIC | | | | 1 | | |
| | | STEEL | | | | 8 | 7 | |
| | | STEEL TREATED | | | | | 1 | |
| | | WROUGHT IRON | | | | | 1 | |
| | | Pipe Material | | | | 9 | 9 | |
| | 2+ | (Blank) | | | | 1 | | |
| | | STEEL | | | 5 | 5 | 8 | |
| | | STEEL TREATED | | | | 1 | | |
| | | WROUGHT IRON | | | | | 1 | |
| | 3 | Pipe Material | | | 5 | 7 | 9 | |
| | | WROUGHT IRON | | | | | 1 | |
| | Leak Grade | Pipe Material | | | | | 1 | |
| | | (Blank) | | | | 1 | | |
| | | PLASTIC | | | | 1 | | |
| | | STEEL | | | 5 | 16 | 18 | |
| | | STEEL TREATED | | | | 1 | 1 | |
| | | WROUGHT IRON | | | | | 3 | |
| | 3 | Pipe Material | | | 5 | 19 | 22 | |
| WROUGHT IRON | | | | | | 1 | | |
| Valve Repair -Pothole | 1 | (Blank) | | | | 1 | 2 | |
| | | Pipe Material | | | | 1 | 2 | |
| | 2 | (Blank) | | 2 | 8 | 14 | 25 | |
| | | PLASTIC | | | 1 | 1 | 2 | |
| | | STEEL | | | | 2 | 6 | |
| | | STEEL TREATED | | | | 1 | 2 | |
| | | Pipe Material | | 2 | 9 | 18 | 35 | |
| | 2+ | (Blank) | | | 1 | 2 | 4 | |
| | | STEEL | | | | | 2 | |
| | | Pipe Material | | | 1 | 2 | 6 | |
| | 3 | STEEL TREATED | | | | 1 | | |
| | | Pipe Material | | | | 1 | | |
| | Leak Grade | (Blank) | | 2 | 9 | 17 | 31 | |
| | | PLASTIC | | | 1 | 1 | 2 | |
| | | STEEL | | | | 2 | 8 | |
| | | STEEL TREATED | | | | 2 | 2 | |
| | | Pipe Material | | 2 | 10 | 22 | 43 | |
| | Plant Regulator Replaced | 1 | STEEL TREATED | | 1 | | | |
| | | | Pipe Material | | 1 | | | |
| | | Leak Grade | STEEL TREATED | | 1 | | | |
| Pipe Material | | | | 1 | | | | |
| Service Mtr/Reg/Set Replaced | 1 | (Blank) | | 1 | 2 | 1 | 1 | |
| | | CAST IRON | | | | | 1 | |
| | | OTHER | | 1 | | | | |
| | | PLASTIC | | | | 1 | | |
| | | STEEL | | 6 | 2 | 4 | 3 | |

| | | | | | | | | | |
|----------------------|----------------------|----------------------|--------------|--------------|--------------|------------|--------------|------------|----------|
| | | STEEL TREATED | | | | 1 | | | 1 |
| | | Pipe Material | | 8 | 5 | 6 | | | 6 |
| | 2 | PLASTIC | | | | | | | 1 |
| | | STEEL | | | | 1 | | | 1 |
| | | STEEL TREATED | | | | | | | 1 |
| | | Pipe Material | | | | 1 | | | 3 |
| | Leak Grade | (Blank) | | 1 | 2 | 1 | | | 1 |
| | | CAST IRON | | | | | | | 1 |
| | | OTHER | | 1 | | | | | |
| | | PLASTIC | | | | | 1 | | 1 |
| | | STEEL | | 6 | 3 | 4 | | | 4 |
| | | STEEL TREATED | | | | 1 | | | 2 |
| | | Pipe Material | | 8 | 6 | 6 | | | 9 |
| Main | 1 | (Blank) | | | | 2 | 5 | | 2 |
| | | CAST IRON | 10 | 8 | 6 | 9 | | 7 | |
| | | PLASTIC | 106 | 89 | 89 | 106 | | 103 | |
| | | PLASTIC INSERT | | 3 | 3 | 5 | | 3 | |
| | | STEEL | 207 | 145 | 134 | 177 | | 142 | |
| | | STEEL TREATED | 15 | 22 | 8 | 13 | | 16 | |
| | | WROUGHT IRON | 1 | 1 | 2 | 1 | | | |
| | | Pipe Material | 339 | 268 | 244 | 316 | | 273 | |
| | 2 | (Blank) | | | 68 | 88 | 83 | | 106 |
| | | CAST IRON | 71 | 53 | 19 | 31 | | 22 | |
| | | OTHER | | 1 | 2 | | | | |
| | | PLASTIC | 81 | 87 | 83 | 104 | | 93 | |
| | | PLASTIC INSERT | | | 2 | | | 1 | |
| | | STEEL | 1,667 | 1,024 | 846 | 784 | | 945 | |
| | | STEEL TREATED | 78 | 51 | 61 | 62 | | 69 | |
| | | WROUGHT IRON | 23 | 15 | 18 | 14 | | 38 | |
| | Pipe Material | 1,920 | 1,299 | 1,119 | 1,078 | | 1,274 | | |
| | 2+ | (Blank) | | | | 2 | 3 | | 1 |
| | | CAST IRON | 21 | 18 | 7 | 13 | | 11 | |
| | | PLASTIC | 39 | 40 | 31 | 38 | | 37 | |
| | | PLASTIC INSERT | | | 1 | | | 1 | |
| | | STEEL | 299 | 202 | 202 | 176 | | 192 | |
| | | STEEL TREATED | 20 | 18 | 19 | 17 | | 22 | |
| | | WROUGHT IRON | 7 | 5 | 2 | 1 | | 5 | |
| | | Pipe Material | 386 | 283 | 264 | 248 | | 269 | |
| | 3 | (Blank) | 2 | 120 | 186 | 62 | | 117 | |
| | | CAST IRON | 3 | 7 | 7 | | | 7 | |
| | | PLASTIC | 2 | 18 | 4 | 4 | | 2 | |
| STEEL | | 277 | 333 | 121 | 45 | | 96 | | |
| STEEL TREATED | | 16 | 3 | 6 | 1 | | 3 | | |
| WROUGHT IRON | | 1 | 2 | | 1 | | 24 | | |
| Pipe Material | | 301 | 483 | 324 | 113 | | 249 | | |
| Leak Grade | (Blank) | 2 | 188 | 278 | 153 | | 226 | | |
| | CAST IRON | 105 | 86 | 39 | 53 | | 47 | | |

| | | OTHER | | 1 | 2 | | |
|--------------------------|------------|----------------------|--------------|--------------|--------------|--------------|--------------|
| | | PLASTIC | 228 | 234 | 207 | 252 | 235 |
| | | PLASTIC INSERT | | 3 | 6 | 5 | 5 |
| | | STEEL | 2,450 | 1,704 | 1,303 | 1,182 | 1,375 |
| | | STEEL TREATED | 129 | 94 | 94 | 93 | 110 |
| | | WROUGHT IRON | 32 | 23 | 22 | 17 | 67 |
| | | Pipe Material | 2,946 | 2,333 | 1,951 | 1,755 | 2,065 |
| Other | 1 | (Blank) | 26 | 22 | 18 | 19 | 22 |
| | | PLASTIC | 3 | | 3 | 5 | 2 |
| | | PLASTIC INSERT | | | | | 1 |
| | | STEEL | 5 | | 1 | 1 | 1 |
| | | STEEL TREATED | | | | | 2 |
| | | Pipe Material | 34 | 22 | 22 | 28 | 25 |
| | 2 | (Blank) | 833 | 449 | 369 | 392 | 414 |
| | | CAST IRON | 1 | | | | |
| | | OTHER | | 4 | | | |
| | | PLASTIC | 11 | 12 | 12 | 12 | 7 |
| | | PLASTIC INSERT | 2 | | 4 | 2 | 2 |
| | | STEEL | 61 | 17 | 14 | 14 | 13 |
| | | STEEL TREATED | 6 | 3 | 3 | 2 | 3 |
| | | Pipe Material | 914 | 485 | 402 | 422 | 439 |
| | 2+ | (Blank) | 64 | 42 | 42 | 52 | 35 |
| | | PLASTIC | | 1 | | 2 | 1 |
| | | STEEL | 8 | | 4 | 1 | 2 |
| | | STEEL TREATED | | 1 | 1 | 2 | |
| | | Pipe Material | 72 | 44 | 47 | 57 | 38 |
| | 3 | (Blank) | 279 | 818 | 1,757 | 1,365 | 1,156 |
| | | OTHER | | 1 | | | |
| | | PLASTIC | 1 | 4 | | 2 | |
| | | STEEL | 1 | 1 | 2 | 2 | 1 |
| | | Pipe Material | 281 | 825 | 1,759 | 1,369 | 1,157 |
| | Leak Grade | (Blank) | 1,202 | 1,331 | 2,186 | 1,828 | 1,627 |
| | | CAST IRON | 1 | | | | |
| | | OTHER | | 5 | | | |
| | | PLASTIC | 15 | 17 | 15 | 21 | 10 |
| PLASTIC INSERT | | 2 | | 4 | 3 | 2 | |
| STEEL | | 75 | 18 | 21 | 18 | 17 | |
| STEEL TREATED | | 6 | 5 | 4 | 6 | 3 | |
| Pipe Material | | 1,301 | 1,376 | 2,230 | 1,876 | 1,659 | |
| Regulator/Station Piping | 1 | (Blank) | | 6 | 4 | 3 | |
| | | OTHER | 3 | 4 | 1 | 1 | |
| | | PLASTIC | 12 | 5 | 2 | 1 | 2 |
| | | PLASTIC INSERT | | 1 | | | |
| | | STEEL | 54 | 31 | 16 | 8 | 7 |
| | | STEEL TREATED | 5 | 1 | 2 | 1 | |
| | | Pipe Material | 74 | 48 | 25 | 14 | 9 |

| | | | | | | | |
|----------------------|----------------|----------------------|------------|------------|------------|------------|------------|
| | 2 | PLASTIC | 1 | 1 | | | 36 |
| | | PLASTIC INSERT | | | | | 3 |
| | | STEEL | 4 | 3 | 4 | 4 | 14 |
| | | STEEL TREATED | | 1 | | 2 | 18 |
| | | Pipe Material | 5 | 5 | 4 | 6 | 71 |
| | 2+ | (Blank) | | 2 | | 1 | |
| | | PLASTIC | | | | | 1 |
| | | STEEL | 2 | | | | |
| | | Pipe Material | 2 | 2 | | 1 | 1 |
| | 3 | PLASTIC | | | | 1 | |
| | | STEEL | | 2 | | | |
| | | Pipe Material | | 2 | | 1 | |
| | Leak Grade | (Blank) | | 8 | 4 | 4 | |
| | | OTHER | 3 | 4 | 1 | 1 | |
| | | PLASTIC | 13 | 6 | 2 | 2 | 39 |
| | | PLASTIC INSERT | | 1 | | | 3 |
| | | STEEL | 60 | 36 | 20 | 12 | 21 |
| STEEL TREATED | | 5 | 2 | 2 | 3 | 18 | |
| Pipe Material | | 81 | 57 | 29 | 22 | 81 | |
| | | | | | | | |
| Service | 1 | (Blank) | | 5 | 13 | 8 | 15 |
| | | CAST IRON | 2 | 1 | 2 | 1 | 1 |
| | | OTHER | | 1 | | | |
| | | PLASTIC | 226 | 244 | 199 | 243 | 224 |
| | | PLASTIC INSERT | 32 | 21 | 27 | 32 | 23 |
| | | STEEL | 117 | 82 | 60 | 63 | 56 |
| | | STEEL TREATED | 29 | 18 | 25 | 25 | 17 |
| | | Pipe Material | 406 | 372 | 326 | 372 | 336 |
| | | | | | | | |
| | 2 | (Blank) | | 46 | 72 | 52 | 72 |
| | | CAST IRON | 7 | 3 | 2 | | 1 |
| | | COPPER | | | 1 | | |
| | | OTHER | | | 1 | | |
| | | PLASTIC | 247 | 303 | 254 | 288 | 284 |
| | | PLASTIC INSERT | 19 | 22 | 14 | 14 | 16 |
| | | STEEL | 525 | 384 | 224 | 196 | 251 |
| | | STEEL TREATED | 40 | 66 | 53 | 104 | 66 |
| | | Pipe Material | 838 | 825 | 621 | 654 | 690 |
| | | | | | | | |
| | 2+ | (Blank) | | 3 | 9 | 13 | 9 |
| | | CAST IRON | 3 | 2 | 1 | 1 | 1 |
| | | PLASTIC | 161 | 109 | 100 | 114 | 87 |
| | | PLASTIC INSERT | 13 | 5 | 7 | 4 | 7 |
| | | STEEL | 129 | 99 | 49 | 69 | 37 |
| | | STEEL TREATED | 32 | 20 | 23 | 28 | 9 |
| Pipe Material | | 338 | 238 | 189 | 229 | 150 | |
| | | | | | | | |
| 3 | (Blank) | | 2 | 6 | 6 | 4 | |
| | PLASTIC | 5 | 32 | 4 | 10 | 3 | |
| | PLASTIC INSERT | | 1 | 1 | | | |

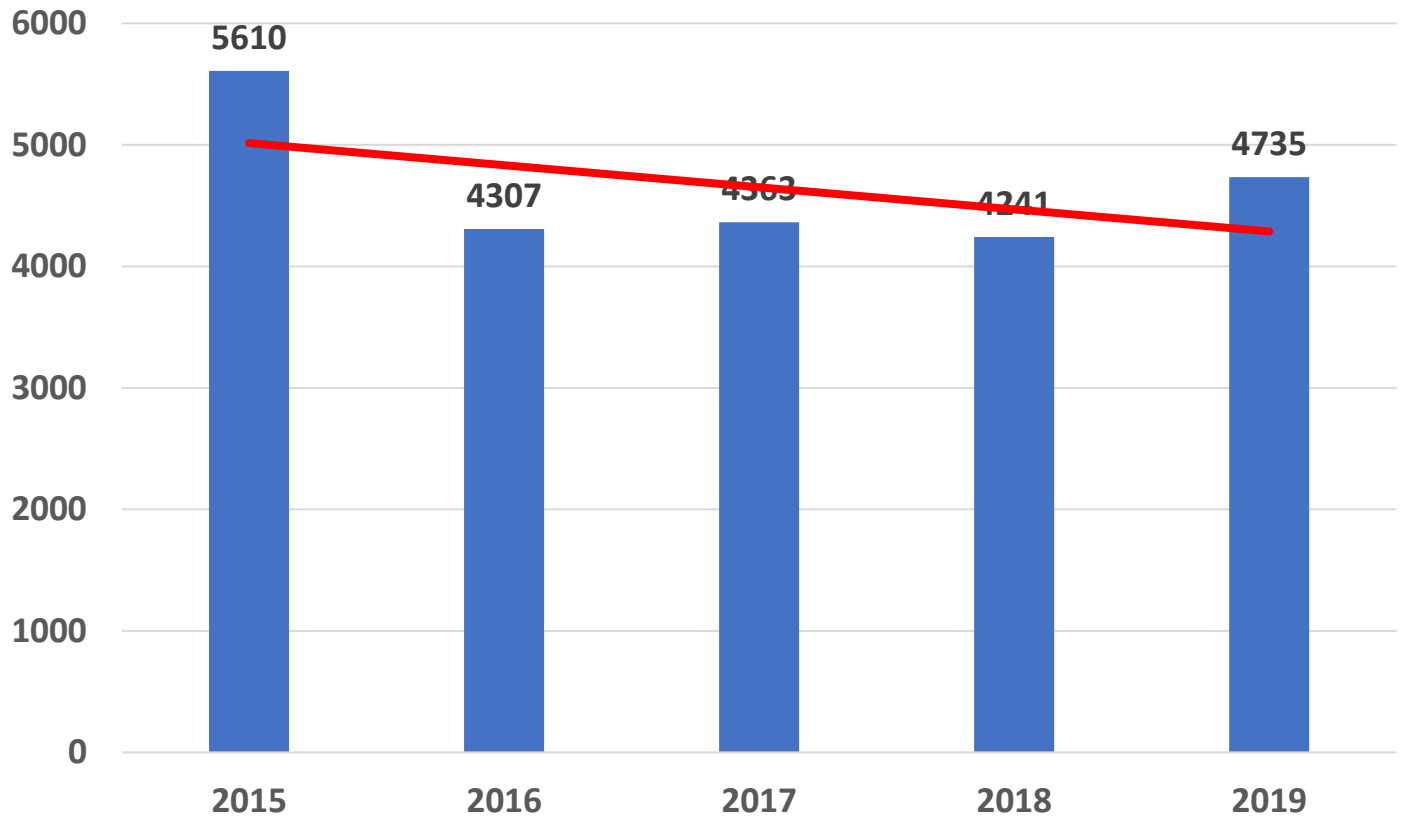
| | | | | | | | | |
|----------------------|-------------------|----------------------|----------------------|--------------|--------------|--------------|--------------|-----------|
| | | STEEL | 20 | 93 | 15 | 10 | 9 | |
| | | STEEL TREATED | 1 | 6 | 2 | 17 | | |
| | | Pipe Material | 26 | 134 | 28 | 43 | 16 | |
| | Leak Grade | (Blank) | | 56 | 100 | 79 | 100 | |
| | | CAST IRON | 12 | 6 | 5 | 2 | 3 | |
| | | COPPER | | | 1 | | | |
| | | OTHER | | 1 | 1 | | | |
| | | PLASTIC | 639 | 688 | 557 | 655 | 598 | |
| | | PLASTIC INSERT | 64 | 49 | 49 | 50 | 46 | |
| | | STEEL | 791 | 658 | 348 | 338 | 353 | |
| | | STEEL TREATED | 102 | 110 | 103 | 174 | 92 | |
| | | WROUGHT IRON | | 1 | | | | |
| | | Pipe Material | 1,608 | 1,569 | 1,164 | 1,298 | 1,192 | |
| Valve | 1 | (Blank) | | | | | 1 | |
| | | STEEL | 3 | | | | | |
| | | STEEL TREATED | | 1 | | | | |
| | | | Pipe Material | 3 | 1 | | 1 | |
| | 2 | (Blank) | | | 14 | 12 | 10 | 10 |
| | | PLASTIC | 2 | | | | 1 | 10 |
| | | STEEL | 63 | 26 | 12 | 7 | | 20 |
| | | STEEL TREATED | 18 | 5 | 9 | 11 | | 3 |
| | | WROUGHT IRON | 3 | | | | | |
| | | Pipe Material | 86 | 45 | 33 | 29 | | 43 |
| | 2+ | (Blank) | | | | 1 | 1 | |
| | | PLASTIC | 1 | | | | | |
| | | STEEL | 3 | | 3 | | 1 | |
| | | STEEL TREATED | 1 | | | | | |
| | | Pipe Material | 5 | | 4 | 2 | | |
| | 3 | (Blank) | | | | | 1 | |
| | | STEEL | 2 | | 1 | | 1 | 1 |
| | | Pipe Material | 2 | | 1 | 2 | 1 | 1 |
| | Leak Grade | (Blank) | | | 14 | 13 | 12 | 11 |
| | | PLASTIC | 3 | | | | 1 | 10 |
| STEEL | | 71 | 26 | 16 | 9 | | 21 | |
| STEEL TREATED | | 19 | 6 | 9 | 11 | | 3 | |
| WROUGHT IRON | | 3 | | | | | | |
| Pipe Material | | 96 | 46 | 38 | 33 | | 45 | |
| Clear Code | 1 | (Blank) | 26 | 34 | 39 | 37 | 43 | |
| | | CAST IRON | 12 | 9 | 8 | 10 | 9 | |
| | | OTHER | 3 | 6 | 1 | 1 | | |
| | | PLASTIC | 347 | 338 | 293 | 356 | 331 | |
| | | PLASTIC INSERT | 32 | 25 | 30 | 38 | 26 | |
| | | STEEL | 386 | 264 | 213 | 256 | 212 | |
| | | STEEL TREATED | 49 | 43 | 36 | 41 | 34 | |
| | | WROUGHT IRON | 1 | 1 | 2 | 1 | | |
| | | Pipe Material | 856 | 720 | 622 | 740 | 655 | |
| | | 2 | (Blank) | 833 | 579 | 549 | 551 | 627 |

| | | | | | | |
|------------|----------------|-------|-------|-------|-------|-------|
| | CAST IRON | 79 | 56 | 21 | 31 | 23 |
| | COPPER | | | 1 | | |
| | OTHER | | 5 | 3 | | |
| | PLASTIC | 342 | 403 | 350 | 407 | 433 |
| | PLASTIC INSERT | 21 | 22 | 20 | 16 | 22 |
| | STEEL | 2,320 | 1,454 | 1,101 | 1,015 | 1,257 |
| | STEEL TREATED | 142 | 126 | 126 | 182 | 163 |
| | WROUGHT IRON | 26 | 16 | 18 | 14 | 39 |
| | Pipe Material | 3,763 | 2,661 | 2,189 | 2,216 | 2,564 |
| 2+ | (Blank) | 64 | 47 | 55 | 73 | 49 |
| | CAST IRON | 24 | 20 | 8 | 14 | 12 |
| | PLASTIC | 201 | 150 | 131 | 154 | 126 |
| | PLASTIC INSERT | 13 | 5 | 8 | 4 | 8 |
| | STEEL | 441 | 301 | 263 | 252 | 241 |
| | STEEL TREATED | 53 | 39 | 43 | 48 | 31 |
| | WROUGHT IRON | 7 | 5 | 2 | 1 | 6 |
| | Pipe Material | 803 | 567 | 510 | 546 | 473 |
| 3 | (Blank) | 281 | 940 | 1,949 | 1,434 | 1,277 |
| | CAST IRON | 3 | 7 | 7 | | 7 |
| | OTHER | | 1 | | | |
| | PLASTIC | 8 | 54 | 8 | 17 | 5 |
| | PLASTIC INSERT | | 1 | 1 | | |
| | STEEL | 300 | 429 | 139 | 58 | 107 |
| | STEEL TREATED | 17 | 10 | 8 | 19 | 3 |
| | WROUGHT IRON | 1 | 2 | | 1 | 25 |
| | Pipe Material | 610 | 1,444 | 2,112 | 1,529 | 1,424 |
| Leak Grade | (Blank) | 1,204 | 1,600 | 2,592 | 2,095 | 1,996 |
| | CAST IRON | 118 | 92 | 44 | 55 | 51 |
| | COPPER | | | 1 | | |
| | OTHER | 3 | 12 | 4 | 1 | |
| | PLASTIC | 898 | 945 | 782 | 934 | 895 |
| | PLASTIC INSERT | 66 | 53 | 59 | 58 | 56 |
| | STEEL | 3,447 | 2,448 | 1,716 | 1,581 | 1,817 |
| | STEEL TREATED | 261 | 218 | 213 | 290 | 231 |
| | WROUGHT IRON | 35 | 24 | 22 | 17 | 70 |
| | Pipe Material | 6,032 | 5,392 | 5,433 | 5,031 | 5,116 |

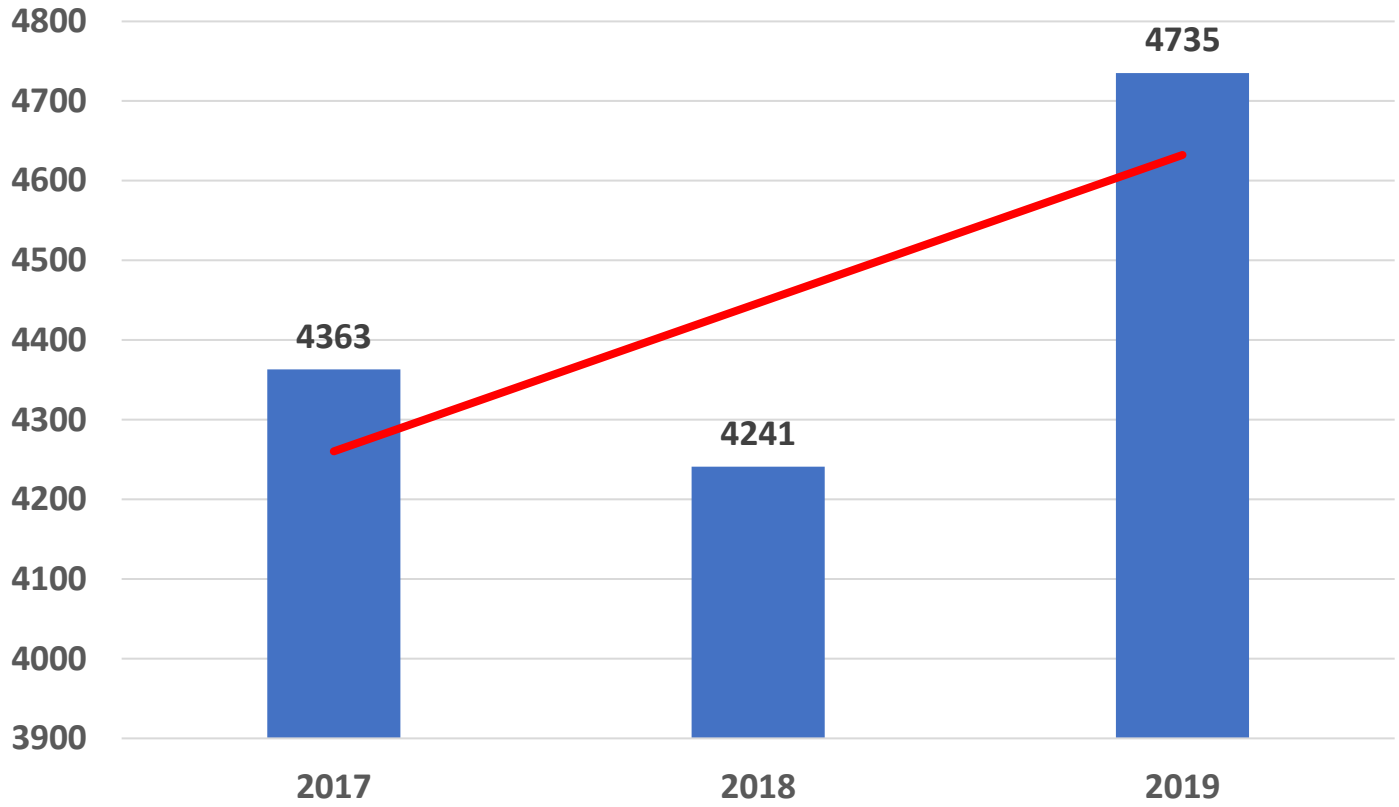
Columbia Gas of Pennsylvania, Inc.
R-2020-3018835
Leaks Found from 2015 through 2019

| Line No. | Leak Grade | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------------|-----------------------|-------------|-------------|-------------|-------------|-------------|
| (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| 1 | Grade 1 Leaks | 856 | 720 | 622 | 742 | 653 |
| 2 | Grade 2 Leaks | 3001 | 2310 | 2280 | 2084 | 2342 |
| 3 | Grade 2+ Leaks | 793 | 572 | 507 | 558 | 466 |
| 4 | Grade 3 Leaks | 960 | 705 | 954 | 857 | 1274 |
| 5 | Total | 5610 | 4307 | 4363 | 4241 | 4735 |

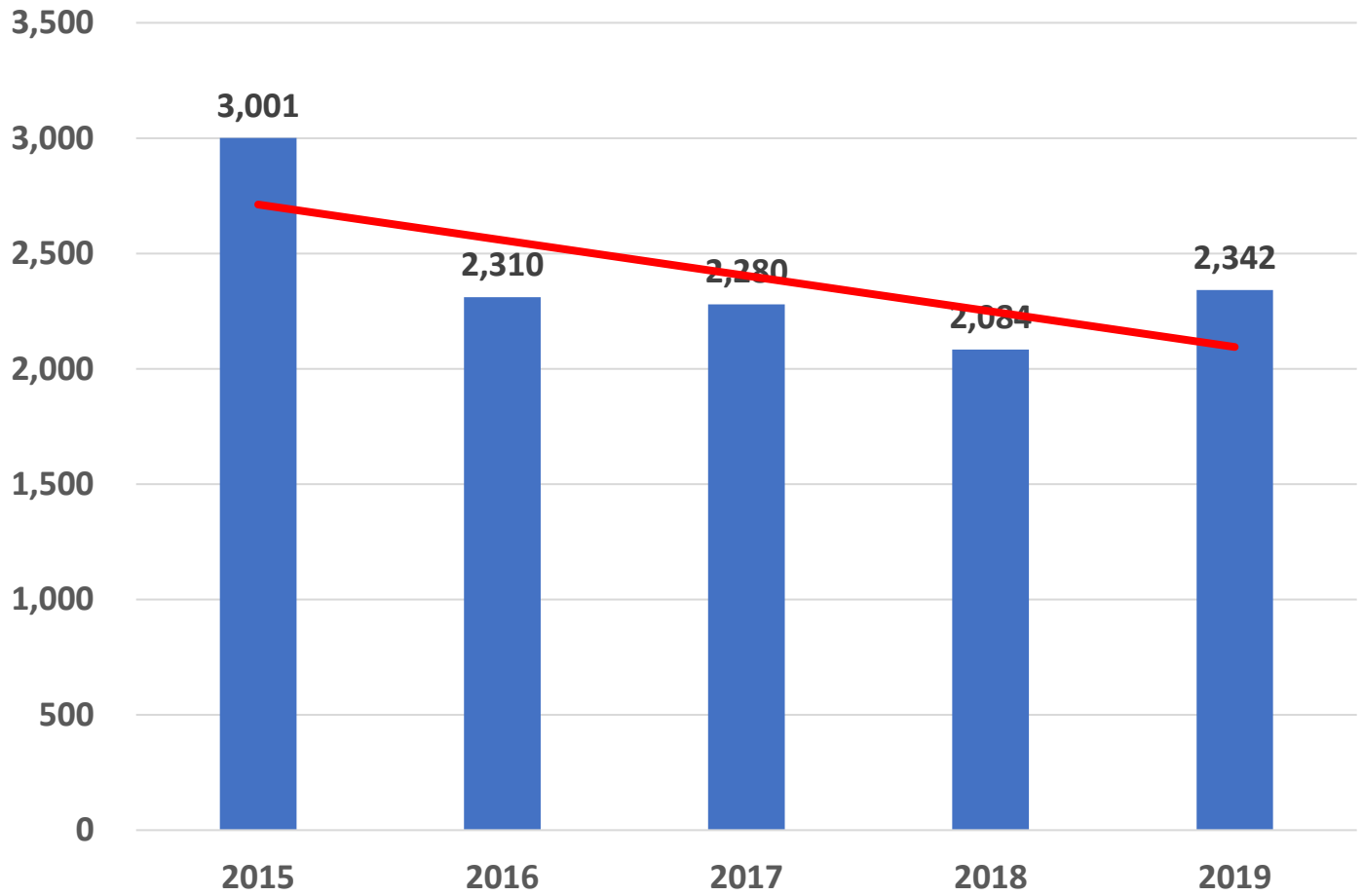
COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Total Leaks Found
2015 through 2019



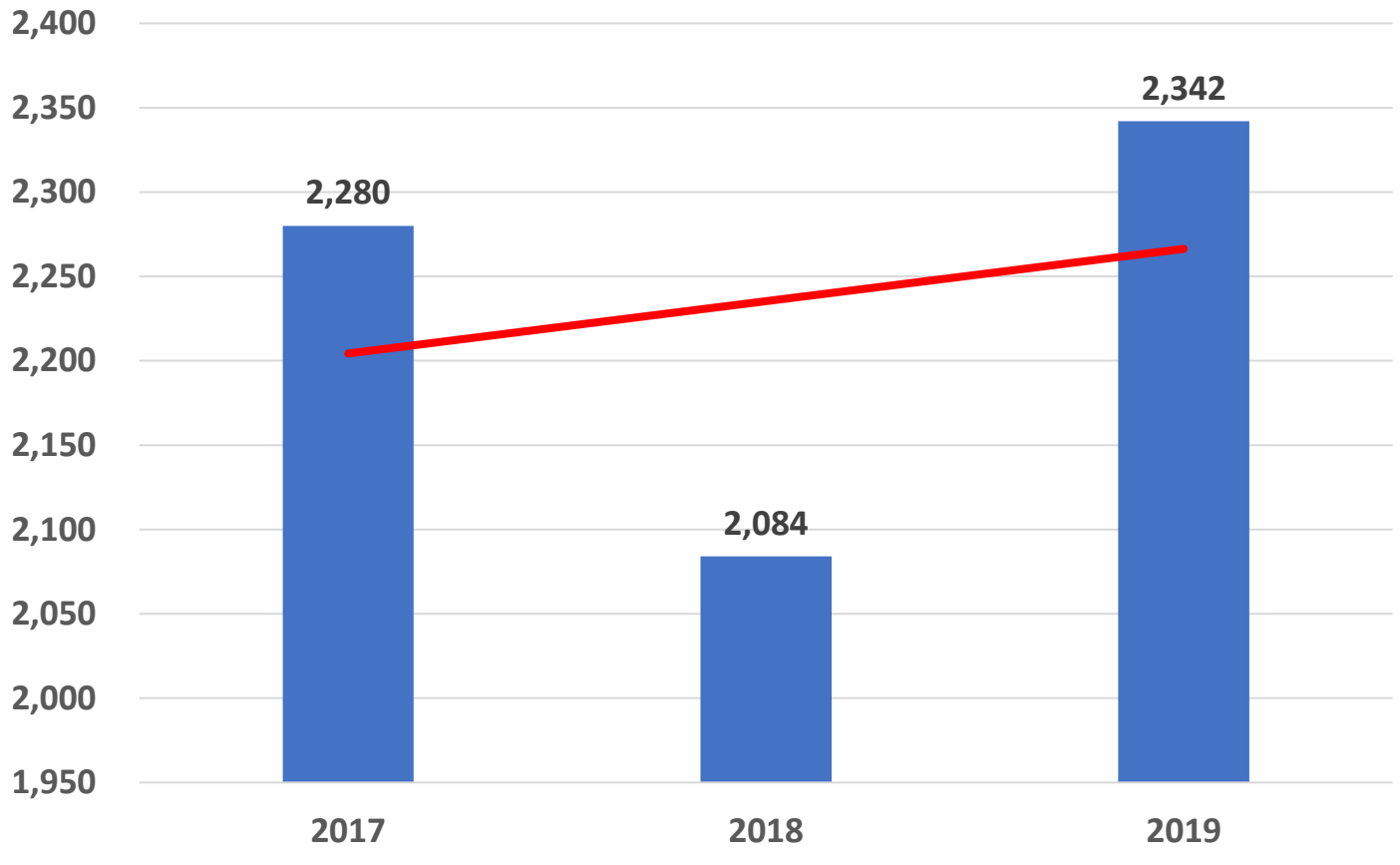
COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Total Leaks Found
2017 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Grade 2 Leaks Found
2015 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Grade 2 Leaks Found
2017 through 2019



Question No. I&E-GS-017

Respondent: M. Davidson

Page 1 of 1

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-017:

**Reference PHMSA Annual Reports on page 19 of Columbia Gas Statement No. 7.
Please provide the company's annual DOT reports, from 2015 through 2019.**

Response:

Please see the following attachments:

- **I&E-GS-017 Attachment A – 2015 DOT Report**
- **I&E-GS-017 Attachment B – 2016 DOT Report**
- **I&E-GS-017 Attachment C – 2016 DOT Supplemental Report**
- **I&E-GS-017 Attachment D – 2017 DOT Report**
- **I&E-GS-017 Attachment E – 2017 DOT Supplemental Report**
- **I&E-GS-017 Attachment F – 2018 DOT Report**
- **I&E-GS-017 Attachment G – 2019 DOT Report**

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 5/31/2018



U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/14/2016

Form Type:

INITIAL

Date
Submitted:

**ANNUAL REPORT FOR
CALENDAR YEAR 2015
GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20165696-28465

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1415.0 | 0 | 22.5 | 1708.8 | 4159.0 | 117.7 | 0 | 0 | 37.4 | 0 | 7460.4 |
| NO. OF SERVICES | 53494 | 0 | 850 | 64600 | 303108 | 0 | 0 | 0 | 0 | 0 | 422052 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|-----------|---------------|----------------------------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 719.1 | 1210.2 | 953.9 | 198.7 | 63.4 | 3146.3 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.9 | 43.5 | 54.0 | 13.9 | 0 | 117.7 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0.1 | 1945.7 | 1563.2 | 649.9 | 0.1 | 0 | 4159 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 36.3 | 0.4 | 0.2 | 0.3 | 0.1 | 0.1 | 37.4 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 37.8 | 2671.1 | 2817.1 | 1658.1 | 212.8 | 63.5 | 7460.4 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | AVERAGE SERVICE LENGTH: 52 | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 38623 | 79383 | 926 | 8 | 4 | 118944 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 277795 | 23697 | 1599 | 17 | 0 | 303108 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 316418 | 103080 | 2525 | 25 | 4 | 422052 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

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| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|--------|
| MILES OF MAIN | 453.3 | 466.9 | 161.6 | 795.4 | 968.8 | 547.3 | 1034.0 | 1069.5 | 1134.1 | 829.5 | 7460.4 |
| NUMBER OF SERVICES | 0 | 18519 | 8932 | 28873 | 56339 | 29304 | 67090 | 76754 | 75180 | 61061 | 422052 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 2419 | 179 | 720 | 113 |
| NATURAL FORCE DAMAGE | 49 | 8 | 49 | 8 |
| EXCAVATION DAMAGE | 98 | 94 | 180 | 180 |
| OTHER OUTSIDE FORCE DAMAGE | 11 | 4 | 30 | 29 |
| PIPE, WELD OR JOINT FAILURE | 234 | 32 | 403 | 64 |
| EQUIPMENT FAILURE | 120 | 2 | 210 | 65 |
| INCORRECT OPERATIONS | 57 | 12 | 138 | 32 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 937

PART D - EXCAVATION DAMAGE

PART E-EXCESS FLOW VALUE(EFV) DATA

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 277

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 10477

- a. One-Call Notification Practices Not Sufficient: 51
- b. Locating Practices Not Sufficient: 89
- c. Excavation Practices Not Sufficient: 137
- d. Other: 0

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 118416

2. NUMBER OF EXCAVATION TICKETS : 114384

PART F - LEAKS ON FEDERAL LAND

PART G-PERCENT OF UNACCOUNTED FOR GAS

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.7%

PART H - ADDITIONAL INFORMATION

PART I - PREPARER

I&E Exhibit No. 5
Schedule No. 7
Page 5 of 29

| | |
|--|--|
| | |
| Brian Powell, Integrity Management Engineer (Preparer's Name and Title) | (614) 481-1069 (Area Code and Telephone Number) |
| | |
| bpowell@nisource.com (Preparer's email address) | (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 5/31/2018



U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/14/2017

Form Type:

INITIAL

Date
Submitted:

ANNUAL REPORT FOR CALENDAR YEAR 2016 GAS DISTRIBUTION SYSTEM

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20177125-31882

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1327.3 | 0 | 22.8 | 1704.4 | 4303.9 | 107.5 | 0 | 0 | 34.6 | 0 | 7500.5 |
| NO. OF SERVICES | 50430 | 0 | 865 | 64661 | 309082 | 0 | 0 | 0 | 0 | 0 | 425038 |

I&E Exhibit No. 5
Schedule No. 7
Page 7 of 29

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|-----------|---------------|----------------------------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 700.1 | 1160.8 | 932.8 | 196.8 | 63.0 | 3054.5 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.7 | 38.9 | 49.7 | 12.8 | 0 | 107.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2007.5 | 1608.3 | 688.0 | 0.1 | 0 | 4303.9 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 33.7 | 0.3 | 0.2 | 0.3 | 0.1 | 0 | 34.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 35.1 | 2713.6 | 2808.2 | 1670.8 | 209.8 | 63 | 7500.5 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | AVERAGE SERVICE LENGTH: 52 | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 37649 | 77388 | 902 | 8 | 9 | 115956 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 283293 | 24158 | 1599 | 32 | 0 | 309082 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 320942 | 101546 | 2501 | 40 | 9 | 425038 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 435.2 | 438.3 | 154.2 | 769.5 | 954.2 | 537.3 | 1025.5 | 1061.8 | 1119.8 | 1004.7 | 7500.5 |
| NUMBER OF SERVICES | 0 | 17743 | 8705 | 28210 | 55369 | 27723 | 65363 | 75520 | 74192 | 72213 | 425038 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1842 | 122 | 773 | 97 |
| NATURAL FORCE DAMAGE | 18 | 6 | 77 | 9 |
| EXCAVATION DAMAGE | 90 | 85 | 212 | 209 |
| OTHER OUTSIDE FORCE DAMAGE | 5 | 3 | 16 | 16 |
| PIPE, WELD OR JOINT FAILURE | 178 | 19 | 445 | 73 |
| EQUIPMENT FAILURE | 71 | 0 | 74 | 42 |
| INCORRECT OPERATIONS | 28 | 7 | 173 | 11 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 594

PART D - EXCAVATION DAMAGE

PART E-EXCESS FLOW VALUE(EFV) DATA

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 293

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 13400

- a. One-Call Notification Practices Not Sufficient: 40
- b. Locating Practices Not Sufficient: 85
- c. Excavation Practices Not Sufficient: 168
- d. Other: 0

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 131961

2. NUMBER OF EXCAVATION TICKETS : 118118

PART F - LEAKS ON FEDERAL LAND

PART G-PERCENT OF UNACCOUNTED FOR GAS

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 0.8%

PART H - ADDITIONAL INFORMATION

PART I - PREPARER

| | |
|--|--|
| | |
| Brian Powell, Integrity Management Engineer (Preparer's Name and Title) | (614) 481-1069 (Area Code and Telephone Number) |
| | |
| bpowell@nisource.com (Preparer's email address) | (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 1/31/2018



U.S Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/14/2017

Form Type:

SUPPLEMENTAL

Date Submitted:

05/04/2018

**ANNUAL REPORT FOR
CALENDAR YEAR 2016
GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION (DOT use only) **20177125-36488**

| | |
|--|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 121 Champion Way |
| 2b. City and County | Canonsburg Washington |
| 2c. State | PA |
| 2d. Zip Code | 15317 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

| 1.GENERAL | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1327.3 | 0 | 22.8 | 1704.4 | 4303.9 | 107.5 | 0 | 0 | 34.6 | 0 | 7500.5 |
| NO. OF SERVICES | 50430 | 0 | 865 | 64661 | 309082 | 0 | 0 | 0 | 0 | 0 | 425038 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 1.0 | 700.1 | 1160.8 | 932.8 | 196.8 | 63.0 | 3054.5 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0.4 | 5.7 | 38.9 | 49.7 | 12.8 | 0 | 107.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2007.5 | 1608.3 | 688.0 | 0.1 | 0 | 4303.9 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 33.7 | 0.3 | 0.2 | 0.3 | 0.1 | 0 | 34.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 35.1 | 2713.6 | 2808.2 | 1670.8 | 209.8 | 63 | 7500.5 | | | | |
| Describe Other Material: | | Unknown | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 37649 | 77388 | 902 | 8 | 9 | 115956 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 283293 | 24158 | 1599 | 32 | 0 | 309082 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 320942 | 101546 | 2501 | 40 | 9 | 425038 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 435.2 | 438.3 | 154.2 | 769.5 | 954.2 | 537.3 | 1025.5 | 1061.8 | 1119.8 | 1004.7 | 7500.5 |
| NUMBER OF SERVICES | 0 | 17743 | 8705 | 28210 | 55369 | 27723 | 65363 | 75520 | 74192 | 72213 | 425038 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1842 | 122 | 773 | 97 |
| NATURAL FORCE DAMAGE | 18 | 6 | 77 | 9 |
| EXCAVATION DAMAGE | 90 | 85 | 212 | 209 |
| OTHER OUTSIDE FORCE DAMAGE | 5 | 3 | 16 | 16 |
| PIPE, WELD OR JOINT FAILURE | 178 | 19 | 445 | 73 |
| EQUIPMENT FAILURE | 71 | 0 | 74 | 42 |
| INCORRECT OPERATIONS | 28 | 7 | 173 | 11 |
| OTHER CAUSE | 0 | 0 | 0 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 594

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 294

- a. One-Call Notification Practices Not Sufficient: 40
- b. Locating Practices Not Sufficient: 85
- c. Excavation Practices Not Sufficient: 169
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 118118

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 13400

Estimated Number Of Services with EFV In the System At End Of Year: 131961

* Total Number of Manual Service Line Shut-off Valves Installed During Year:

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year:

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 0.8%

PART H - ADDITIONAL INFORMATION

I&E Exhibit No. 5
Schedule No. 7
Page 13 of 29

| PART I - PREPARER | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 460-6443 (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 460-8417 (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 1/31/2018



U.S Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2018

Form Type:

INITIAL

Date Submitted:

**ANNUAL REPORT FOR
CALENDAR YEAR 2017
GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION (DOT use only) **20188736-35886**

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W Nationwide Blvd. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|-----------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1248.2 | 0 | 23.5 | 1688 | 4464.3 | 92.5 | 0 | 0 | 31.9 | 0 | 7548.4 |
| NO. OF SERVICES | 47795 | 0 | 865 | 64667 | 316205 | 0 | 0 | 0 | 0 | 0 | 429532 |

I&E Exhibit No. 5
Schedule No. 7
Page 15 of 29

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 673.8 | 1112.8 | 913.7 | 196.3 | 63 | 2959.7 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.5 | 35.4 | 42.1 | 9.5 | 0 | 92.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2069.6 | 1659.3 | 735.3 | 0.1 | 0 | 4464.3 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 31.9 | 0 | 0 | 0 | 0 | 0 | 31.9 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 32 | 2748.9 | 2807.5 | 1691.1 | 205.9 | 63 | 7548.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 36797 | 75628 | 390 | 503 | 9 | 113327 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 289845 | 24725 | 1599 | 35 | 1 | 316205 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 326642 | 100353 | 1989 | 538 | 10 | 429532 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 414.8 | 399.6 | 145.1 | 750.2 | 941.6 | 527.2 | 1015.3 | 1051.6 | 1112.1 | 1190.9 | 7548.4 |
| NUMBER OF SERVICES | 0 | 17025 | 8449 | 27744 | 54445 | 26410 | 63806 | 74235 | 73255 | 84163 | 429532 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1588 | 113 | 491 | 95 |
| NATURAL FORCE DAMAGE | 106 | 103 | 143 | 142 |
| EXCAVATION DAMAGE | 52 | 5 | 64 | 14 |
| OTHER OUTSIDE FORCE DAMAGE | 3 | 3 | 17 | 16 |
| PIPE, WELD OR JOINT FAILURE | 120 | 15 | 244 | 59 |
| EQUIPMENT FAILURE | 59 | 1 | 100 | 14 |
| INCORRECT OPERATIONS | 59 | 5 | 134 | 14 |
| OTHER CAUSE | 4 | 1 | 2 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 672

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 238

- a. One-Call Notification Practices Not Sufficient: 29
- b. Locating Practices Not Sufficient: 77
- c. Excavation Practices Not Sufficient: 132
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 121839

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 16366

Estimated Number Of Services with EFV In the System At End Of Year: 145743

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 816

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 196874

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.4%

PART H - ADDITIONAL INFORMATION

| PART I - PREPARER | |
|--|---|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 460-6443 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 460-8417 _____ (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 1/31/2018



U.S Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/15/2018

Form Type:

SUPPLEMENTAL

Date
Submitted:

02/12/2020

ANNUAL REPORT FOR CALENDAR YEAR 2017 GAS DISTRIBUTION SYSTEM

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20188736-39482

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W Nationwide Blvd. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1.GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1248.2 | 0 | 23.5 | 1688 | 4464.3 | 92.5 | 0 | 0 | 31.9 | 0 | 7548.4 |
| NO. OF SERVICES | 47795 | 0 | 865 | 64667 | 316205 | 0 | 0 | 0 | 0 | 0 | 429532 |

I&E Exhibit No. 5
Schedule No. 7
Page 19 of 29

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|------------------|----------------------------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 673.8 | 1112.8 | 913.7 | 196.3 | 63 | 2959.7 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.5 | 35.4 | 42.1 | 9.5 | 0 | 92.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2069.6 | 1659.3 | 735.3 | 0.1 | 0 | 4464.3 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 31.9 | 0 | 0 | 0 | 0 | 0 | 31.9 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 32 | 2748.9 | 2807.5 | 1691.1 | 205.9 | 63 | 7548.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 36797 | 75628 | 390 | 503 | 9 | 113327 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 289845 | 24725 | 1599 | 35 | 1 | 316205 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 326642 | 100353 | 1989 | 538 | 10 | 429532 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

I&E Exhibit No. 5
Schedule No. 7
Page 20 of 29

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 414.8 | 399.6 | 145.1 | 750.2 | 941.6 | 527.2 | 1015.3 | 1051.6 | 1112.1 | 1190.9 | 7548.4 |
| NUMBER OF SERVICES | 0 | 17025 | 8449 | 27744 | 54445 | 26410 | 63806 | 74235 | 73255 | 84163 | 429532 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1588 | 113 | 491 | 95 |
| NATURAL FORCE DAMAGE | 52 | 5 | 64 | 14 |
| EXCAVATION DAMAGE | 106 | 103 | 143 | 142 |
| OTHER OUTSIDE FORCE DAMAGE | 3 | 3 | 17 | 16 |
| PIPE, WELD OR JOINT FAILURE | 120 | 15 | 244 | 59 |
| EQUIPMENT FAILURE | 59 | 1 | 100 | 14 |
| INCORRECT OPERATIONS | 59 | 5 | 134 | 14 |
| OTHER CAUSE | 4 | 1 | 2 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 672

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 238

a. One-Call Notification Practices Not Sufficient: 29

b. Locating Practices Not Sufficient: 77

c. Excavation Practices Not Sufficient: 132

d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 121839

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 16366

Estimated Number Of Services with EFV In the System At End Of Year: 145743

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 816

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 196874

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (PURCHASED GAS + PRODUCED GAS) EQUALS PERCENT UNACCOUNTED FOR.

INPUT FOR YEAR ENDING 6/30: 1.4%

PART H - ADDITIONAL INFORMATION

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614)460-6443 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614)460-8417 _____ (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 10/31/2021



U.S Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/15/2019

Form Type:

SUPPLEMENTAL

Date
Submitted:

05/01/2019

ANNUAL REPORT FOR CALENDAR YEAR 2018 GAS DISTRIBUTION SYSTEM

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20190902-38763

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W. Nationwide Blvd. |
| 2b. City and County | Columbus Franklin |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1.GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1203.4 | 0 | 21.2 | 1684.8 | 4601.7 | 81.5 | 0 | 0 | 29.6 | 0 | 7622.2 |
| NO. OF SERVICES | 45815 | 0 | 808 | 64144 | 321511 | 0 | 0 | 0 | 0 | 0 | 432278 |

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|----------------------------|-----------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 654.7 | 1081 | 914.2 | 196.7 | 62.7 | 2909.4 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 5.1 | 31 | 37.1 | 8.3 | 0 | 81.5 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2136.4 | 1697.4 | 767.8 | 0.1 | 0 | 4601.7 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 28.5 | 0.4 | 0.3 | 0.3 | 0.1 | 0 | 29.6 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 28.6 | 2796.6 | 2809.7 | 1719.4 | 205.2 | 62.7 | 7622.2 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 35963 | 73916 | 384 | 495 | 9 | 110767 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 294730 | 25142 | 1590 | 48 | 1 | 321511 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 330693 | 99058 | 1974 | 543 | 10 | 432278 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| MILES OF MAIN | 403.2 | 379 | 138.9 | 747.1 | 924.7 | 522 | 1009.3 | 1042.7 | 1106.4 | 1348.9 | 7622.2 |
| NUMBER OF SERVICES | 0 | 16436 | 8209 | 27297 | 53444 | 24800 | 61919 | 72801 | 72240 | 95132 | 432278 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1337 | 174 | 502 | 87 |
| NATURAL FORCE DAMAGE | 47 | 5 | 70 | 9 |
| EXCAVATION DAMAGE | 108 | 105 | 178 | 176 |
| OTHER OUTSIDE FORCE DAMAGE | 7 | 4 | 12 | 11 |
| PIPE, WELD OR JOINT FAILURE | 147 | 18 | 371 | 70 |
| EQUIPMENT FAILURE | 60 | 2 | 36 | 8 |
| INCORRECT OPERATIONS | 94 | 13 | 159 | 25 |
| OTHER CAUSE | 7 | 2 | 7 | 3 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 558

PART D - EXCAVATION DAMAGE1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 295

- a. One-Call Notification Practices Not Sufficient: 32
- b. Locating Practices Not Sufficient: 82
- c. Excavation Practices Not Sufficient: 181
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 141592**PART E - EXCESS FLOW VALVE (EFV) AND SERVICE VALVE DATA**Total Number Of Services with EFV Installed During Year: 14595Estimated Number Of Services with EFV In the System At End Of Year: 158518* Total Number of Manual Service Line Shut-off Valves Installed During Year: 757* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 190394**These questions only pertain to reporting years 2017 & beyond.***PART F - LEAKS ON FEDERAL LAND**TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0**PART G-PERCENT OF UNACCOUNTED FOR GAS**

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL CONSUMPTION FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

$$\frac{[(\text{PURCHASED GAS} + \text{PRODUCED GAS}) \text{ MINUS } (\text{CUSTOMER USE} + \text{COMPANY USE} + \text{APPROPRIATE ADJUSTMENTS})]}{(\text{CUSTOMER USE} + \text{COMPANY USE} + \text{APPROPRIATE ADJUSTMENTS})} \times 100 \text{ EQUALS PERCENT UNACCOUNTED FOR.}$$
FOR YEAR ENDING 6/30: 1.8%**PART H - ADDITIONAL INFORMATION**

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|---|
| | |
| David Firth, operator (Preparer's Name and Title) | (614) 481-1064 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614) 481-1004 _____ (Area Code and Facsimile Number) |

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629
EXPIRATION DATE: 10/31/2021



U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Initial Date
Submitted:

03/13/2020

Form Type:

INITIAL

Date
Submitted:

**ANNUAL REPORT FOR
CALENDAR YEAR 2019
GAS DISTRIBUTION SYSTEM**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION

(DOT use only)

20201266-40565

| | |
|---|------------------------------|
| 1. Name of Operator | COLUMBIA GAS OF PENNSYLVANIA |
| 2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED) | |
| 2a. Street Address | 290 W NATIONWIDE BLVD. |
| 2b. City and County | Columbus |
| 2c. State | OH |
| 2d. Zip Code | 43215 |
| 3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER | 2600 |
| 4. HEADQUARTERS NAME & ADDRESS | |
| 4a. Street Address | 121 CHAMPION WAY |
| 4b. City and County | CANONSBURG |
| 4c. State | PA |
| 4d. Zip Code | 15317 |
| 5. STATE IN WHICH SYSTEM OPERATES | PA |
| 6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.) | |
| Natural Gas | |
| 7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.): | |
| Investor Owned | |

PART B - SYSTEM DESCRIPTION

1. GENERAL

| | STEEL | | | | PLASTIC | CAST/ WROUGHT IRON | DUCTILE IRON | COPPER | OTHER | RECONDITION ED CAST IRON | SYSTEM TOTAL |
|--------------------|-------------|--------|---------------------------|--------|---------|--------------------------|-----------------|--------|-------|--------------------------------|-----------------|
| | UNPROTECTED | | CATHODICALLY PROTECTED | | | | | | | | |
| | BARE | COATED | BARE | COATED | | | | | | | |
| MILES OF MAIN | 1112 | 0 | 21.1 | 1664 | 4762 | 69.2 | 0 | 0 | 28.1 | 0 | 7656.4 |
| NO. OF SERVICES | 42695 | 0 | 808 | 63892 | 326273 | 0 | 0 | 0 | 0 | 0 | 433668 |

I&E Exhibit No. 5
Schedule No. 7
Page 27 of 29

| 2.MILES OF MAINS IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
|--|---------|------------|-----------------|-----------------|----------------------------|-----------|---------------|-----------|-----------|-----------|-------|
| MATERIAL | UNKNOWN | 2" OR LESS | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" THRU 12" | OVER 12" | SYSTEM TOTALS | | | | |
| STEEL | 0.1 | 631.8 | 1031.8 | 877.8 | 194 | 61.6 | 2797.1 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 4.5 | 25 | 32.8 | 6.9 | 0 | 69.2 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 2206.9 | 1749.5 | 803.9 | 1.7 | 0 | 4762 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 27 | 0.4 | 0.3 | 0.3 | 0.1 | 0 | 28.1 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 27.1 | 2843.6 | 2806.6 | 1714.8 | 202.7 | 61.6 | 7656.4 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR | | | | | | | | | | | |
| | | | | | AVERAGE SERVICE LENGTH: 52 | | | | | | |
| MATERIAL | UNKNOWN | 1" OR LESS | OVER 1" THRU 2" | OVER 2" THRU 4" | OVER 4" THRU 8" | OVER 8" | SYSTEM TOTALS | | | | |
| STEEL | 0 | 34878 | 71685 | 338 | 485 | 9 | 107395 | | | | |
| DUCTILE IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| COPPER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| CAST/WROUGHT IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PVC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC PE | 0 | 299114 | 25516 | 1298 | 344 | 1 | 326273 | | | | |
| PLASTIC ABS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PLASTIC OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| OTHER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| RECONDITIONED CAST IRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| TOTAL | 0 | 333992 | 97201 | 1636 | 829 | 10 | 433668 | | | | |
| Describe Other Material: | | | | | | | | | | | |
| 4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION | | | | | | | | | | | |
| | UNKNOWN | PRE-1940 | 1940-1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2009 | 2010-2019 | TOTAL |

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| | | | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| MILES OF MAIN | 373.7 | 348.8 | 130.2 | 720.3 | 908.2 | 513.4 | 995.6 | 1034.3 | 1095.1 | 1536.8 | 7656.4 |
| NUMBER OF SERVICES | 0 | 15793 | 7943 | 26868 | 51729 | 22997 | 59629 | 71327 | 71068 | 106314 | 433668 |

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

| CAUSE OF LEAK | MAINS | | SERVICES | |
|-----------------------------|-------|-----------|----------|-----------|
| | TOTAL | HAZARDOUS | TOTAL | HAZARDOUS |
| CORROSION FAILURE | 1661 | 136 | 484 | 80 |
| NATURAL FORCE DAMAGE | 76 | 8 | 78 | 12 |
| EXCAVATION DAMAGE | 106 | 105 | 173 | 171 |
| OTHER OUTSIDE FORCE DAMAGE | 4 | 1 | 10 | 10 |
| PIPE, WELD OR JOINT FAILURE | 170 | 16 | 354 | 46 |
| EQUIPMENT FAILURE | 81 | 3 | 18 | 4 |
| INCORRECT OPERATIONS | 48 | 10 | 182 | 28 |
| OTHER CAUSE | 4 | 0 | 4 | 0 |

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 336

PART D - EXCAVATION DAMAGE

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 287

- a. One-Call Notification Practices Not Sufficient: 42
- b. Locating Practices Not Sufficient: 92
- c. Excavation Practices Not Sufficient: 153
- d. Other: 0

2. NUMBER OF EXCAVATION TICKETS : 144695

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

Total Number Of Services with EFV Installed During Year: 4022

Estimated Number Of Services with EFV In the System At End Of Year: 171630

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 318

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 211754

**These questions only pertain to reporting years 2017 & beyond.*

PART F - LEAKS ON FEDERAL LAND

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

PART G-PERCENT OF UNACCOUNTED FOR GAS

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL CONSUMPTION FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS) TIMES 100 EQUALS PERCENT UNACCOUNTED FOR.

FOR YEAR ENDING 6/30: 1.8%

PART H - ADDITIONAL INFORMATION

| | |
|--|--|
| | |
|--|--|

PART I - PREPARER

| | |
|--|--|
| | |
| David Firth, operator (Preparer's Name and Title) | (614)460-6443 _____ (Area Code and Telephone Number) |
| | |
| dfirth@nisource.com (Preparer's email address) | (614)460-8417 _____ (Area Code and Facsimile Number) |

COLUMBIA GAS OF PENNSYLVANIA, INC.

R-2020-3018835

Leaks Per Mile of Priority Pipes

2015 through 2019

| Year | Miles of Priority Pipes | Number of Leaks | Leaks Per Mile of Priority Pipes |
|------|----------------------------|-----------------------|-------------------------------------|
| 2019 | 1,202 | 5,116 | 4.255 |
| 2018 | 1,306 | 5,031 | 3.852 |
| 2017 | 1,364 | 5,433 | 3.983 |
| 2016 | 1,458 | 5,392 | 3.699 |
| 2015 | 1,555 | 6,032 | 3.879 |

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-012:

Reference Distribution Integrity Management Program (DIMP) on page 27 of Columbia Gas Statement No. 7. Provide a schedule depicting the pipeline miles replaced by type, corresponding risk factor reduction, and a comparison of how your DIMP risk total decreased or increased by project for calendar years 2015 through 2019.

Response:

Please see I&E-GS-001 Attachment A showing the footage of main replaced by type.

The replacement of bare steel and cast iron main is one of the leading programs to address risk in the DIMP. Because the DIMP risk model is quantitative and validated by Subject Matter Experts (SME), the risk scores for bare steel and cast iron main are continuously determined to be a high risk by the SME's in order to maintain focus on its replacement. There are several key indicators of risk reduction used by the Company. Those indicators include good, measurable progress on LTIIP, the removal of bare steel and cast iron pipe (more than 436 miles removed from 2015-2019) and the overall reduction in the number of open type-2 leaks.

To assess the replacement of bare steel and cast iron pipe as part of the DIMP plan, the Company uses the Optimain risk model to prioritize the replacement of mainline pipe due to age and condition. Historic Optimain risk scores by capital project are not readily available, as the Company uses Optimain to build necessary replacement projects, not to track scores of completed capital projects. However, the Company does maintain historic Optimain risk scores by total pipe segment by year.

Question No. I&E-GS-012
Respondent: M. Davidson
Page 2 of 2

Accordingly, the Optimain risk scores by year, identifying the total risk removed with respect to each year, with the associated footage of main replaced for each year, is shown below in Table 1:

Table 1

| Year | Priority Pipe Main Replaced by Foot (See Table 1 to GS-024) | Optimain-Total Risk Scores by Year | Risk Removed (from prior year's score) | % Reduction from Prior Year's Score |
|------|---|------------------------------------|--|-------------------------------------|
| 2019 | 516,689 | 547,857 | (20,497) | 3.61% |
| 2018 | 302,606 | 568,354 | (3,273) | 0.60% |
| 2017 | 509,428 | 571,627 | 8923 | -1.59%* |
| 2016 | 478,790 | 562,703 | (32,604) | 5.48% |
| 2015 | 496,610 | 595,308 | **n/a | **n/a |

*The increase in risk scores for 2017 can be attributed to improvements made to the Optimain scoring model related to the leak placement process. As a result of this process, the Optimain risk scores were adjusted this year from their original status, thus showing a new base line annual risk score for that year.

**2014 risk score data is not available and so the risk removed and risk reduction % cannot be calculated for 2014 to 2015.

Question No. I&E-GS-005
Respondent: M. Davidson
Page 1 of 1

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-005:

Reference facility damages on page 9 of Columbia Gas Statement No. 7. For each year, from 2015 through 2019, please provide the following:

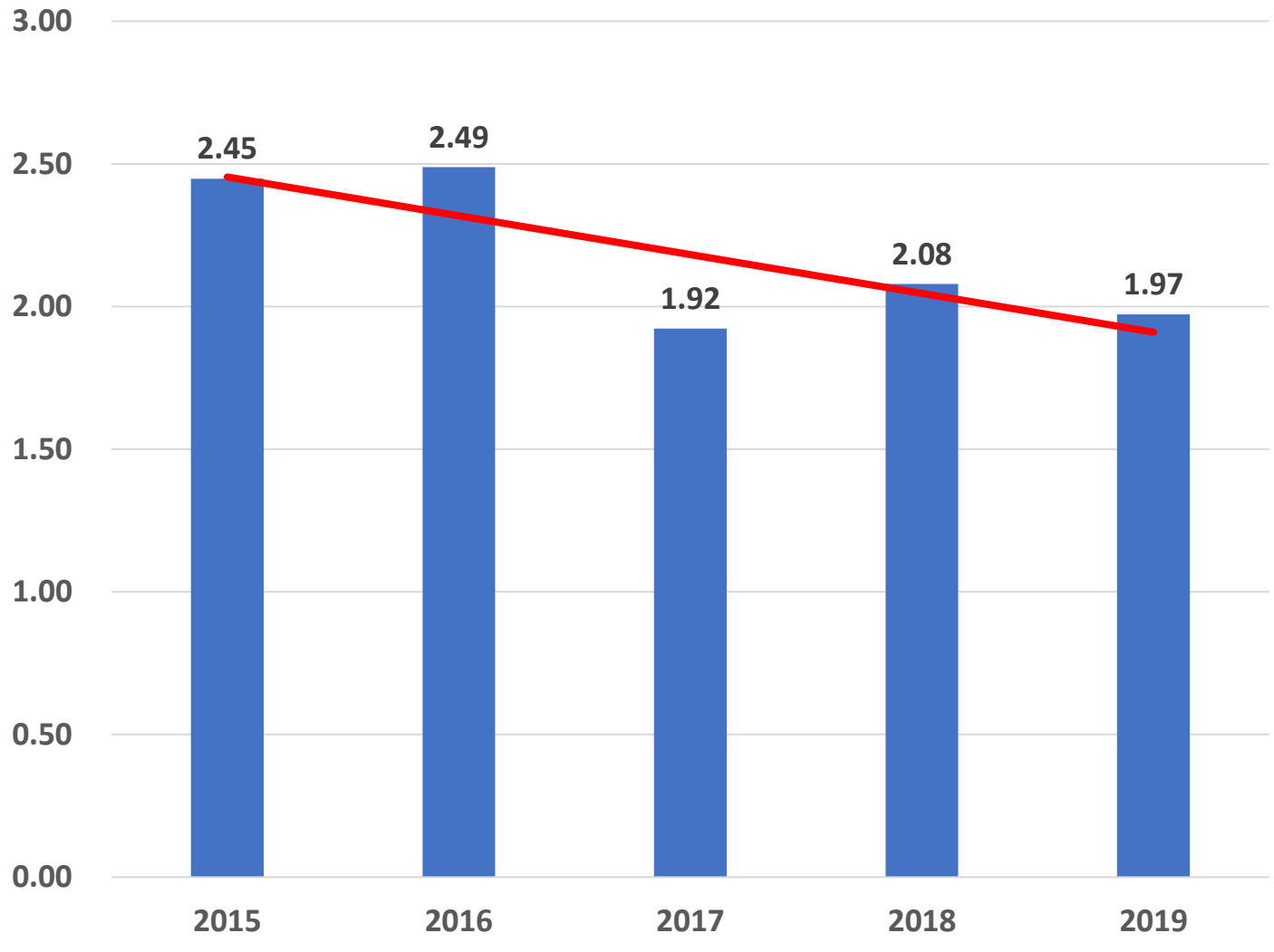
- A. The total tickets received;
- B. The total tickets marked per KARL response;
- C. The total number of line hits; and
- D. The total tickets cleared.

Response:

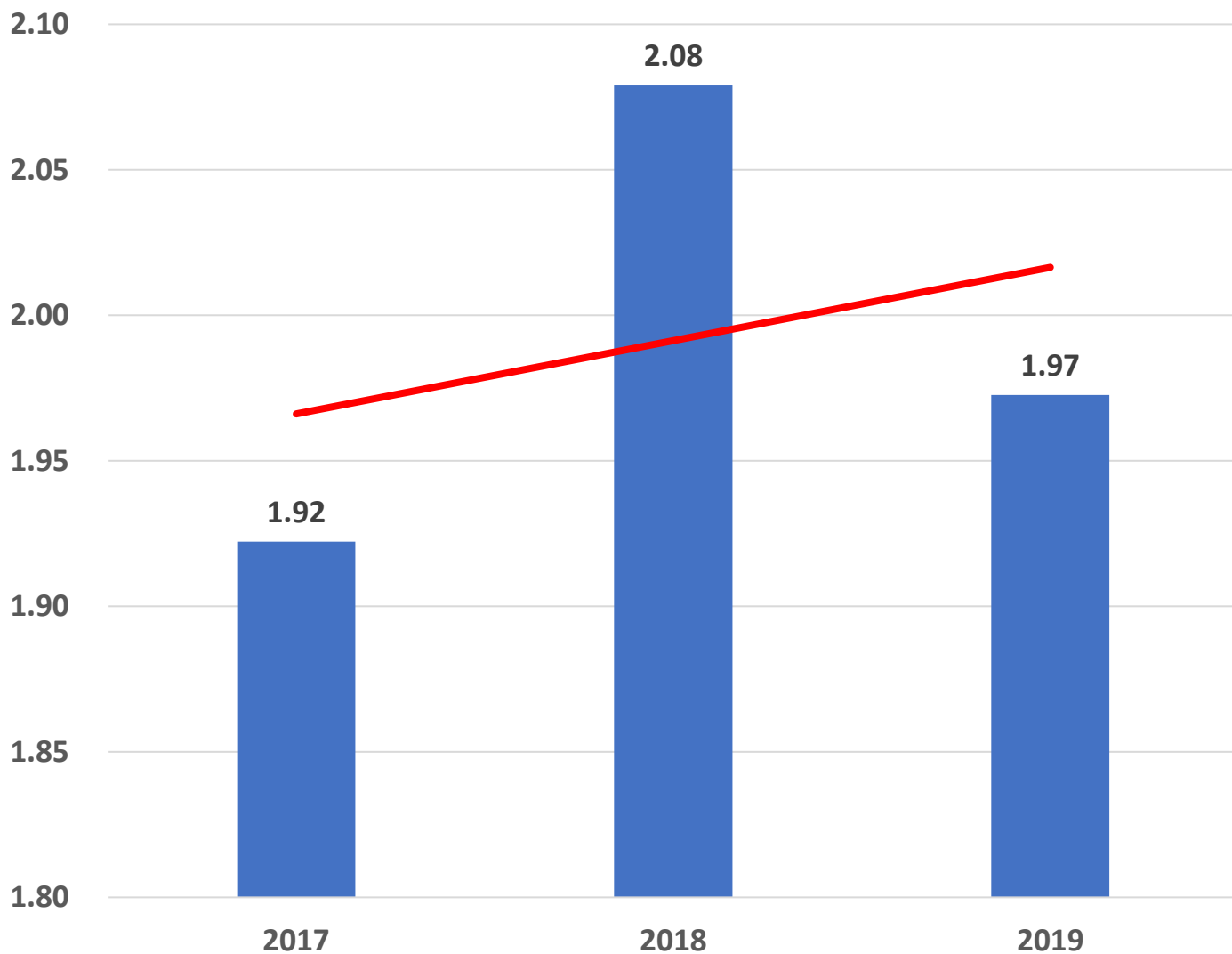
See table below for requested information by year for 2015 through 2019.

| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|---|-------------|-------------|-------------|-------------|-------------|
| Total tickets received | 114,400 | 118,140 | 123,812 | 141,891 | 145,490 |
| Total tickets marked per KARL | 77,603 | 83,118 | 81,057 | 92,899 | 105,183 |
| Total number of main and service line excavation hits | 280 | 294 | 238 | 295 | 287 |
| Total tickets cleared | 35,833 | 33,908 | 41,620 | 47,101 | 39,308 |

CCOLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Excavation Damages per 1,000 Tickets
2015 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Excavation Damages per 1,000 Tickets
2017 through 2019



Question No. I&E-GS-006
Respondent: M. Davidson
Page 1 of 2

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-006:

Reference facility damages on page 9 of Columbia Gas Statement No. 7. For each year, from 2015 through 2019, please provide a breakdown of the total facility damages by:

- A. Mapping errors;**
- B. Poor records;**
- C. Facilities not marked;**
- D. Facilities marked incorrectly;**
- E. Excavator failed to expose the facilities;**
- F. No locates requested;**
- G. Insufficient notifications;**
- H. Deliberate;**
- I. Natural forces;**
- J. Excavator error; and**
- K. Other.**

Response:

Please see table below for a breakdown of the total service and main line damages by the requested causes for years 2015 through 2019:

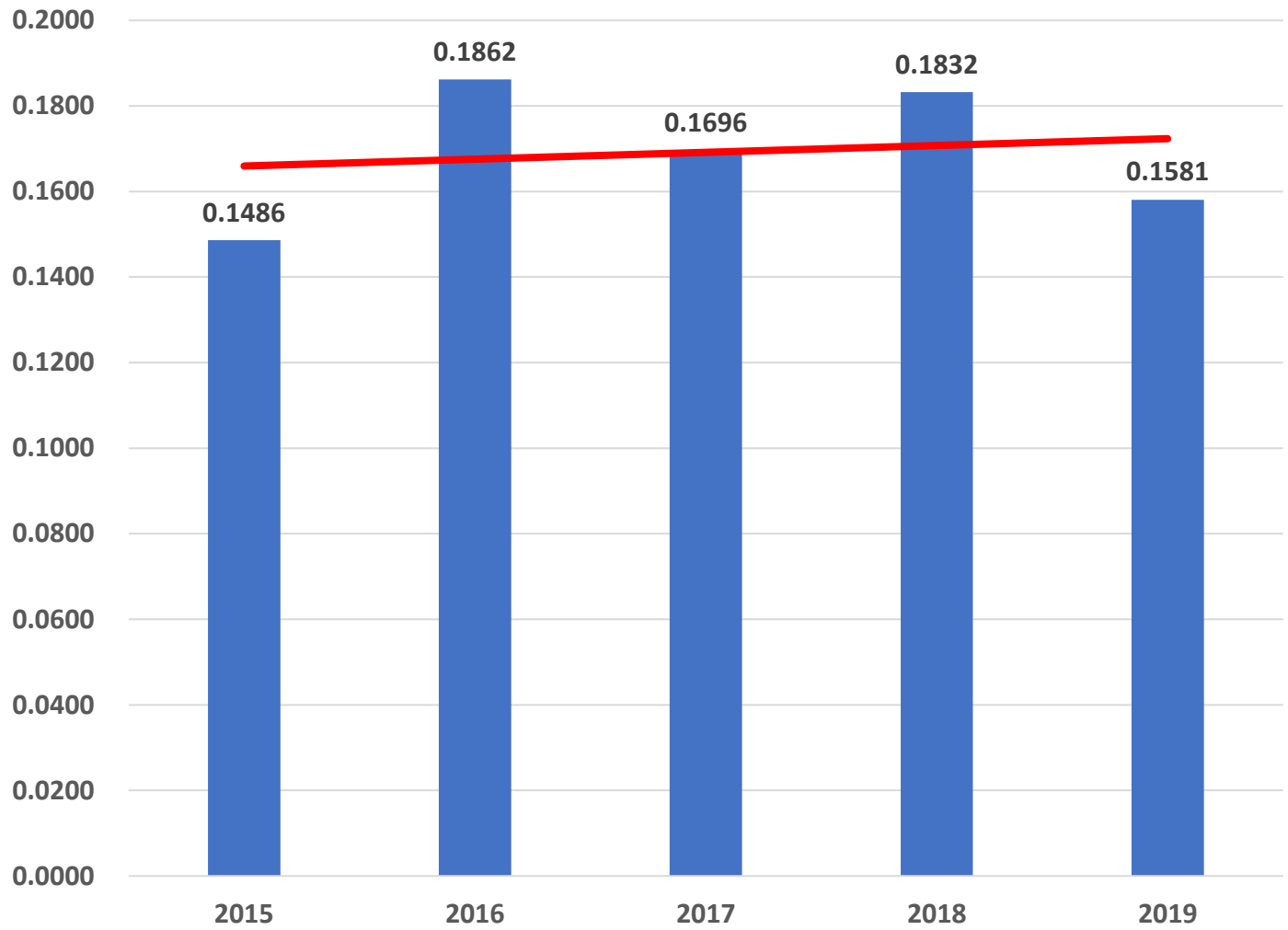
Question No. I&E-GS-006

Respondent: M. Davidson

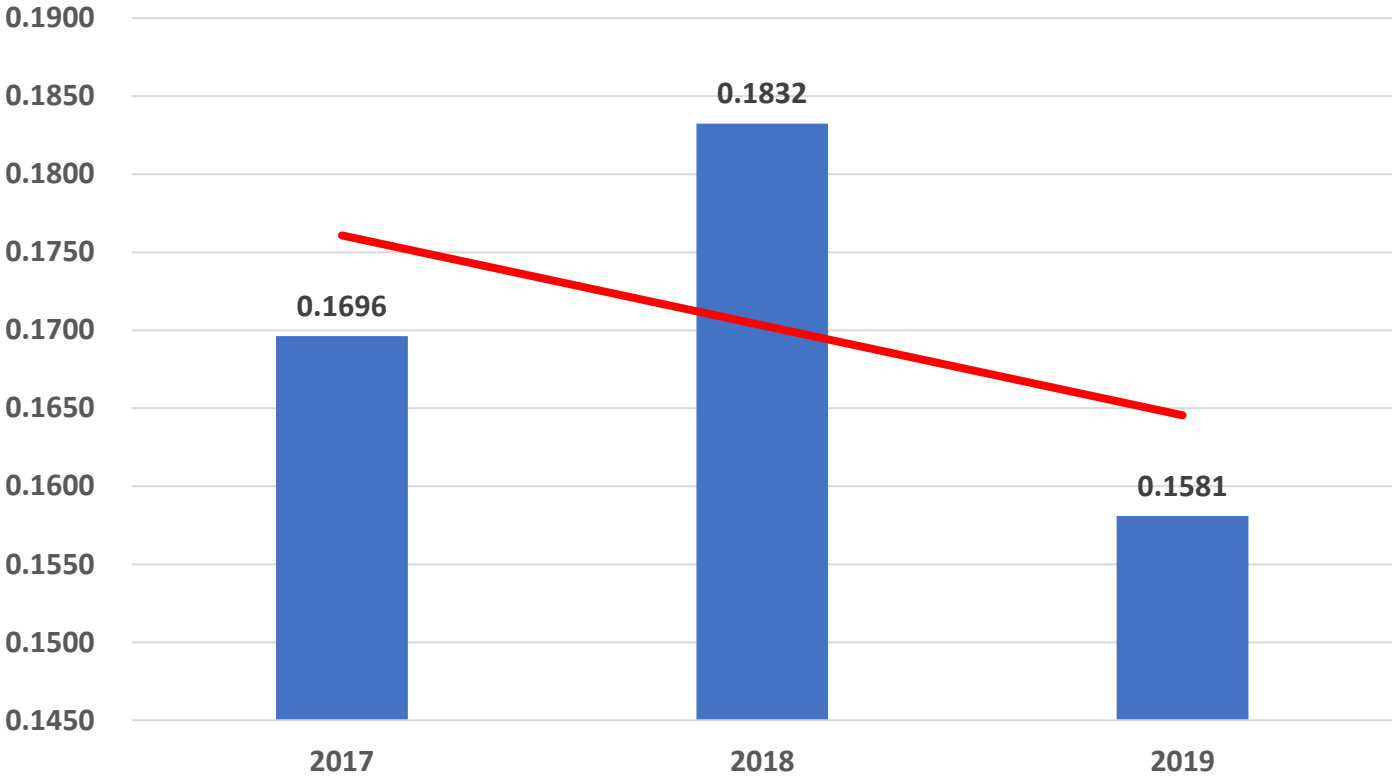
Page 2 of 2

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|------|------|------|------|------|
| A. Mapping errors; | 17 | 22 | 21 | 26 | 23 |
| B. Poor records; | 34 | 34 | 26 | 22 | 35 |
| C. Facilities not marked; | 24 | 20 | 17 | 16 | 20 |
| D. Facilities marked incorrectly; | 14 | 11 | 13 | 18 | 14 |
| E. Excavator failed to expose the facilities; | 53 | 58 | 51 | 93 | 67 |
| F. No locates requested; | 51 | 40 | 29 | 32 | 42 |
| G. Insufficient notifications; | 14 | 9 | 3 | 13 | 15 |
| H. Deliberate; | 0 | 0 | 0 | 0 | 0 |
| I. Natural forces; | 0 | 1 | 0 | 0 | 1 |
| J. Excavator error; and | 73 | 100 | 78 | 75 | 71 |
| K. Other. | 12 | 5 | 2 | 1 | 0 |

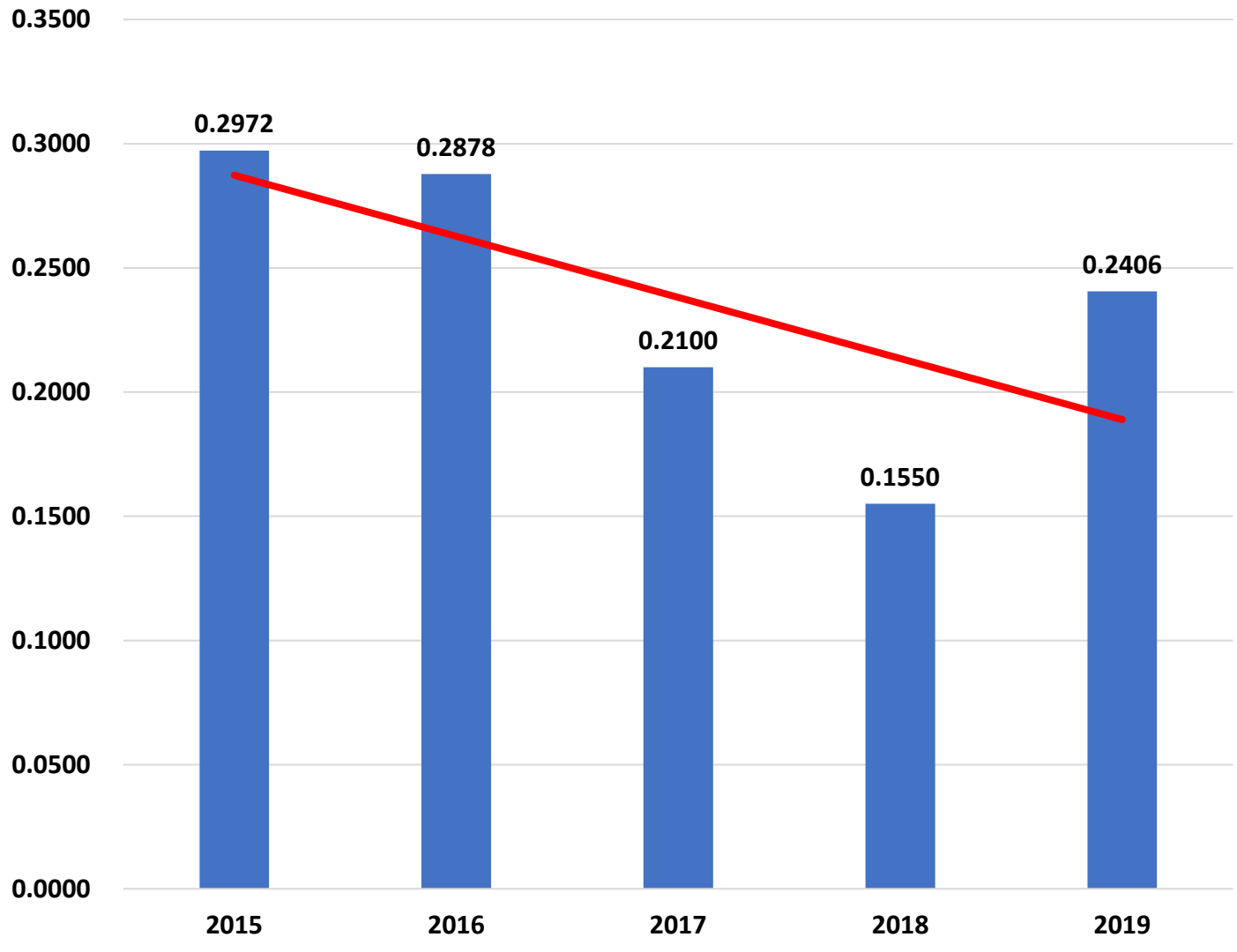
CCOLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Facility Damages due to Mapping Errors (per 1,000 Tickets)
2015 through 2019



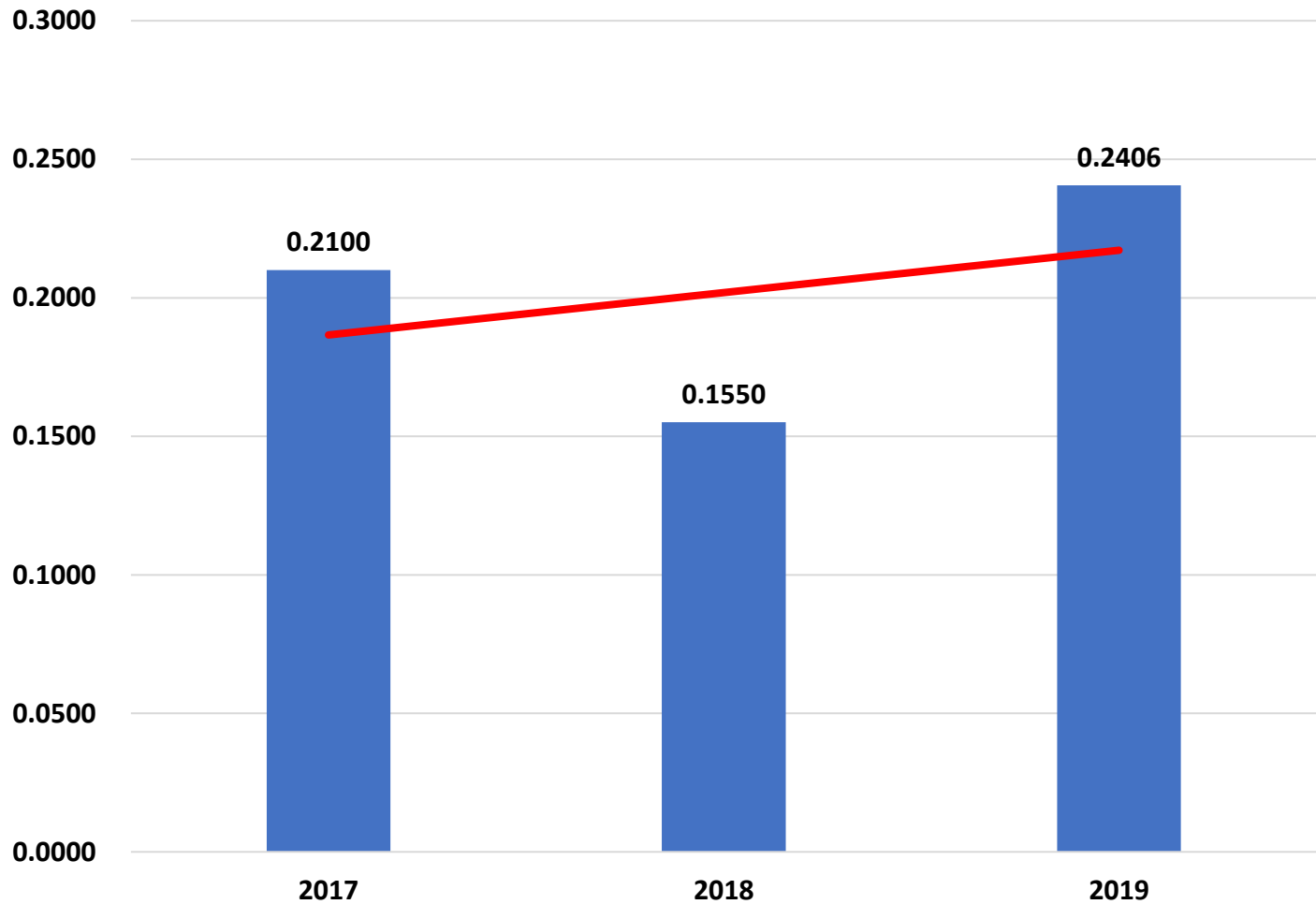
**COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Facility Damages due to Mapping Errors (per 1,000 Tickets)
2017 through 2019**



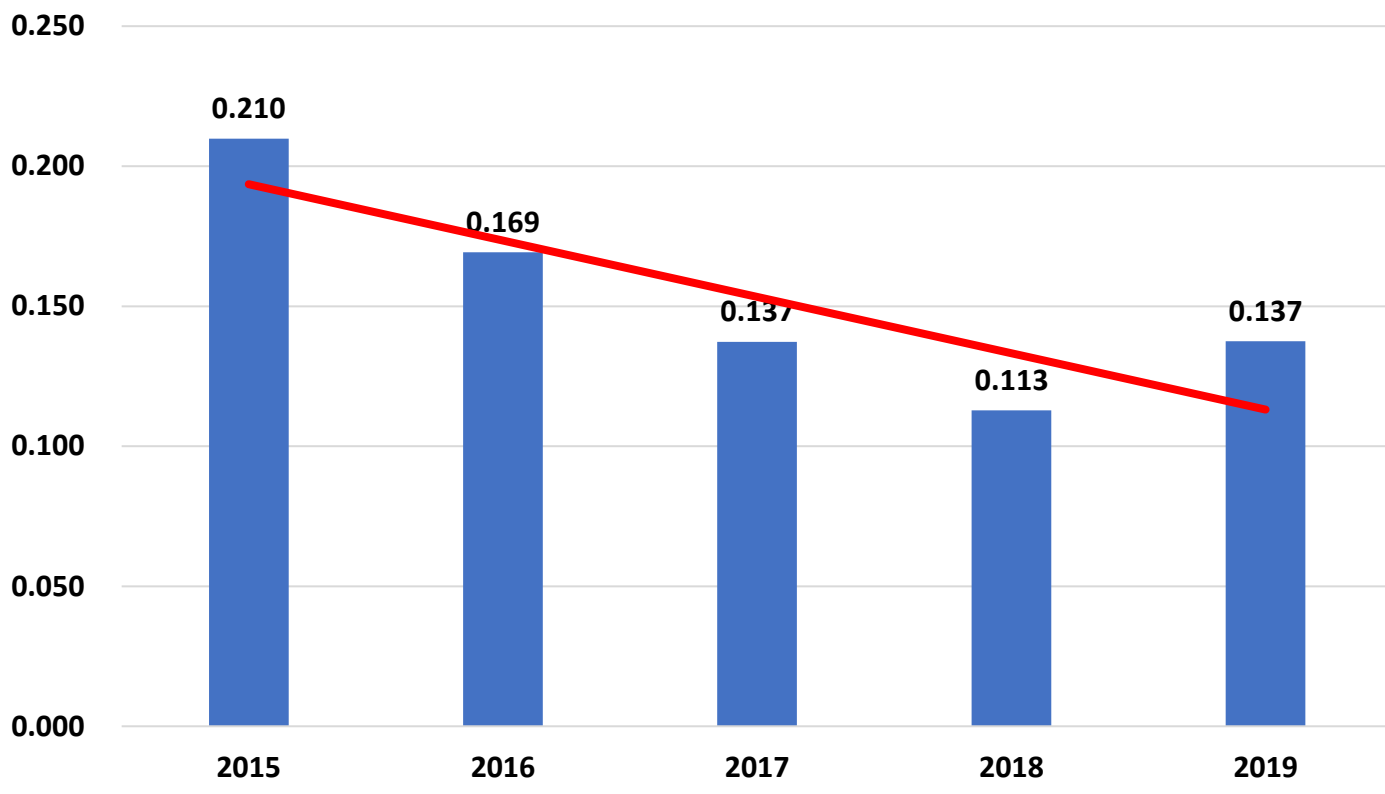
COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Poor Records Related Damages (per 1,000 Tickets)
2015 through 2019



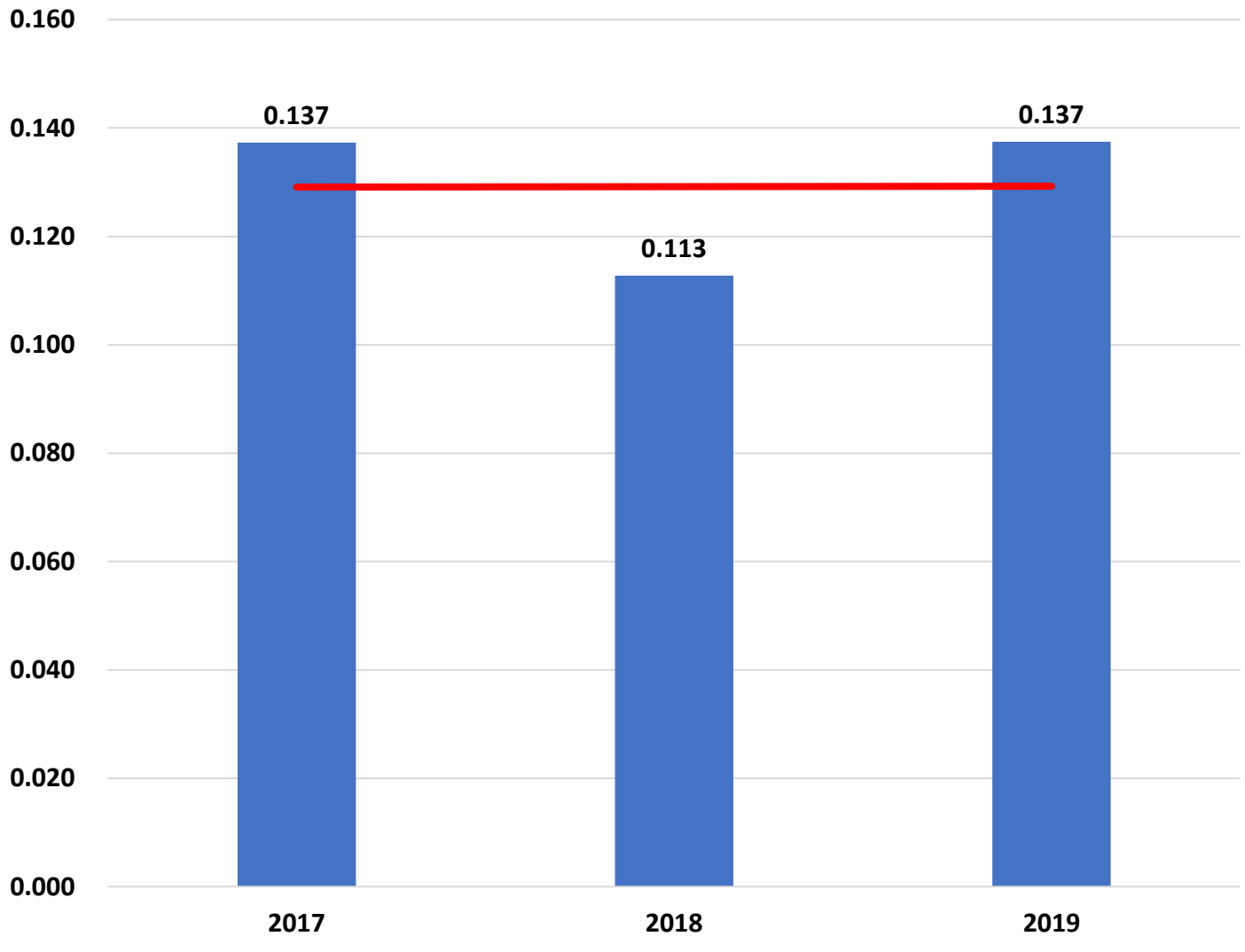
COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Poor Records Related Damages (per 1,000 Tickets)
2017 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Facility not Marked Related Damages (per 1,000 Tickets)
2015 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Facility not Marked Related Damages (per 1,000 Tickets)
2017 through 2019



COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-023:

Reference Columbia's response to I&E-GS-4. Please provide the following information in each category for the years 2015 through 2019:

- A. How much money Columbia spent on damages that were the company's fault;
- B. How much money Columbia billed contractors at fault; and
- C. How much money Columbia collected from the contractors at fault.

Response:

The information in each category for the years 2015 through 2019 has been provided below:

- A. How much money Columbia spent on damages that occurred between 2015 – 2019 that were the company's fault, based on the date on which the damage occurred.

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|-------------|-------------|-------------|-------------|-------------|
| Total Spend on Damages that were the Company's fault | \$159,714 | \$164,131 | \$151,735 | \$215,096 | \$216,100 |

Question No. I&E-GS-023

Respondent: M. Davidson

Page 2 of 2

- B. How much money Columbia billed from third parties on damages that occurred between 2015 – 2019, and for which they were at fault, based on date on which the damage occurred.

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|-----------|-----------|-----------|-----------|-----------|
| Total Third Party At Fault Billed | \$433,271 | \$341,157 | \$267,650 | \$300,484 | \$388,815 |

- C. How much money Columbia collected from third parties on damages that occurred between 2015 – 2019, and for which they were at fault, based on the date on which the funds were collected.

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|-----------|-----------|-----------|-----------|-----------|
| Payments received on third party at-fault damages | \$126,872 | \$303,238 | \$183,760 | \$254,088 | \$350,088 |

COLUMBIA GAS OF PENNSYLVANIA, INC.
 R-2020-3018835
 Damage Costs
 2015 through 2019

| Line No. | Description | 2015 | 2016 | 2017 | 2018 | 2019 | Total |
|----------|---|-----------|-----------|-----------|-----------|-----------|-------------|
| A | B | C | D | E | F | G | H |
| 1 | Total Spend on Damages that were Columbia's Fault | \$159,714 | \$164,131 | \$151,735 | \$215,096 | \$216,100 | \$906,776 |
| 2 | Total Third Party At Fault Billed by Columbia | \$433,271 | \$341,157 | \$267,650 | \$300,484 | \$388,815 | \$1,731,377 |
| 3 | Payments Received on Third-Party at-Fault Damages | \$126,872 | \$303,238 | \$183,760 | \$254,088 | \$350,088 | \$1,218,046 |
| 4 | Total | \$719,857 | \$808,526 | \$603,145 | \$769,668 | \$955,003 | \$3,856,199 |

COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-010:

Reference the legacy service line enhancement program on page 23 of Columbia Gas Statement No. 7. For each year, from 2015 through 2019, please provide a breakdown of the number of non-reportable incidents involving incorrect operations due to poor records and/or employee fault.

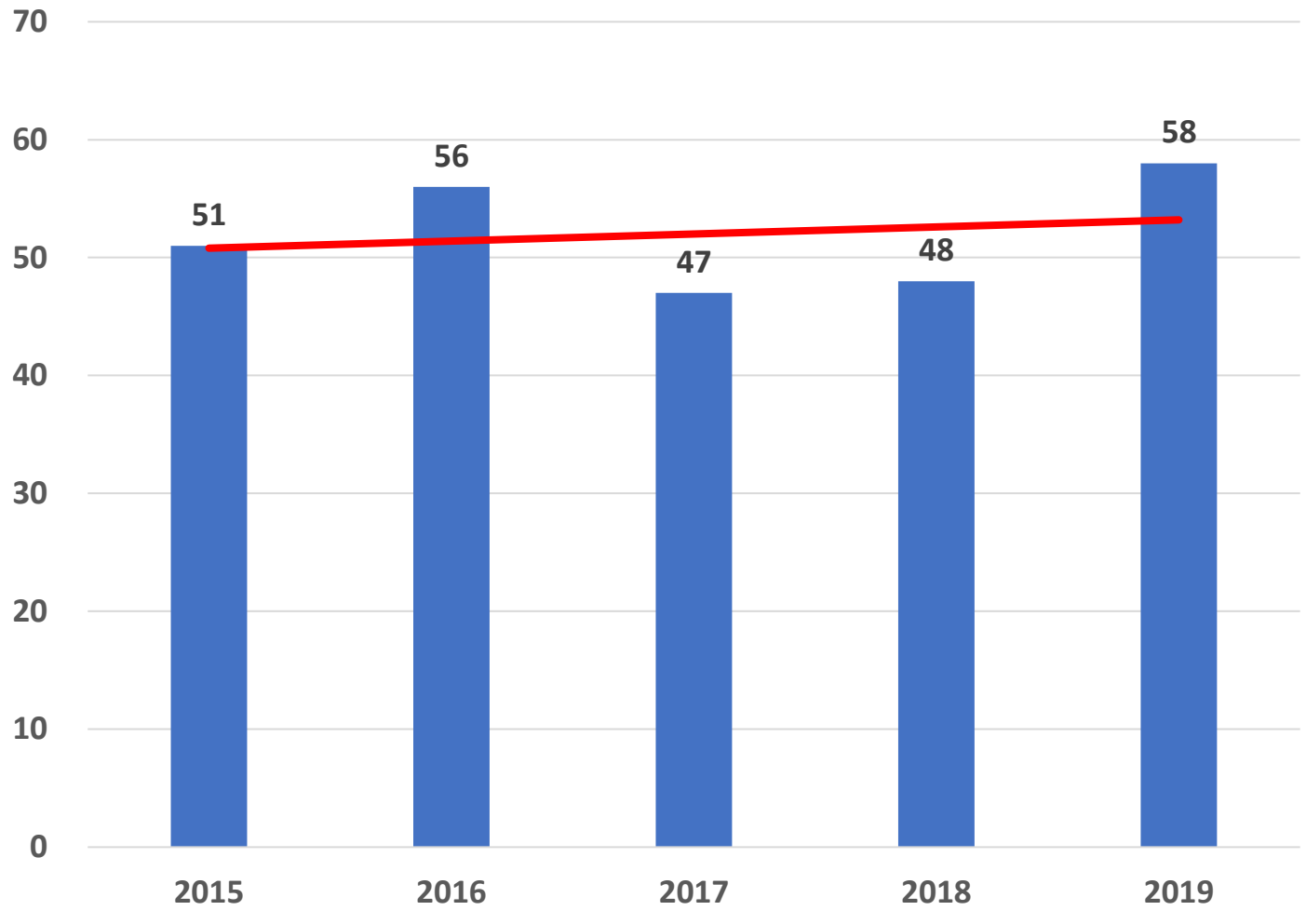
Response:

In the table below, please find a breakdown of the number of non-reportable incidents involving incorrect operations due to poor records and employee fault (“first party” fault).

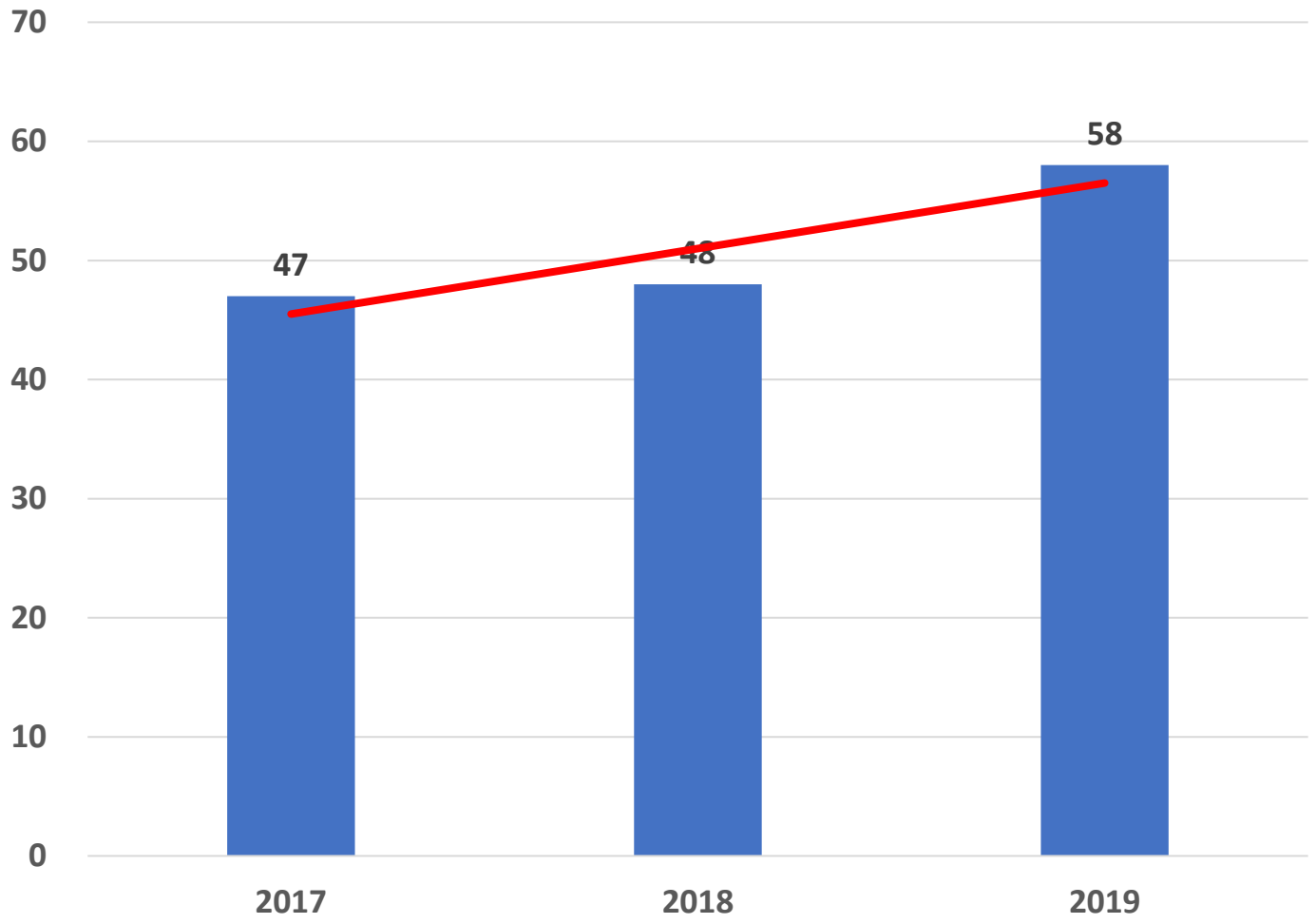
| | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|----------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| DIMP – Excavation – Poor Records | 51 | 56 | 47 | 48 | 58 |
| First Party Fault* | 27 | 31 | 28 | 24 | 26 |

**First Party Fault reflects when Columbia Gas of Pennsylvania was the damaging party due to Excavator Error, in addition to when Columbia Gas of Pennsylvania was the responsible party due to Locator Error (note there were no First Party Failure to Call incidents in the time period requested).*

COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Non-Reportable Incidents due to Poor Records
2015 through 2019



COLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Non-Reportable Incidents due to Poor Records
2017 through 2019



Question No. I&E-GS-007-REV

Respondent: M. Davidson

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COLUMBIA GAS OF PENNSYLVANIA INC.

R-2020-3018835

Data Requests

Bureau of Investigation & Enforcement – Set GS

Question No. I&E-GS-007-REV:

Reference field assembled riser replacement program on page 24 of Columbia Gas Statement No. 7. For each year from, 2015 through 2019, please provide a breakdown of the total riser failures on:

- A. Company owned service lines; and
- B. Customer owned service lines.

Revised Response:

Please see revised table below for the number of company and customer owned riser failures by total failures and the subset of those identified as field assembled for each year, 2015 through 2019. Please note, the Company owned total for 2019 (*) has been updated from the original I&E-GS-007 response due to a duplication of numbers between company and customer owned.

| | | 2015 | 2016 | 2017 | 2018 | 2019 |
|----------------|--|-----------|-----------|-----------|-----------|-----------|
| Company Owned | <i>Total Riser Failures</i> | 30 | 40 | 51 | 51 | 50* |
| | <i>Field Assembled Failures</i> | 24 | 39 | 46 | 42 | 48 |
| Customer Owned | <i>Total Riser Failures</i> | 1 | 2 | 1 | 19 | 3 |
| | <i>Field Assembled Failures</i> | 0 | 0 | 0 | 15 | 0 |
| TOTAL | <i>Total Riser Failures</i> | 31 | 42 | 52 | 70 | 53 |
| | <i>Field Assembled Failures</i> | 24 | 39 | 46 | 57 | 48 |

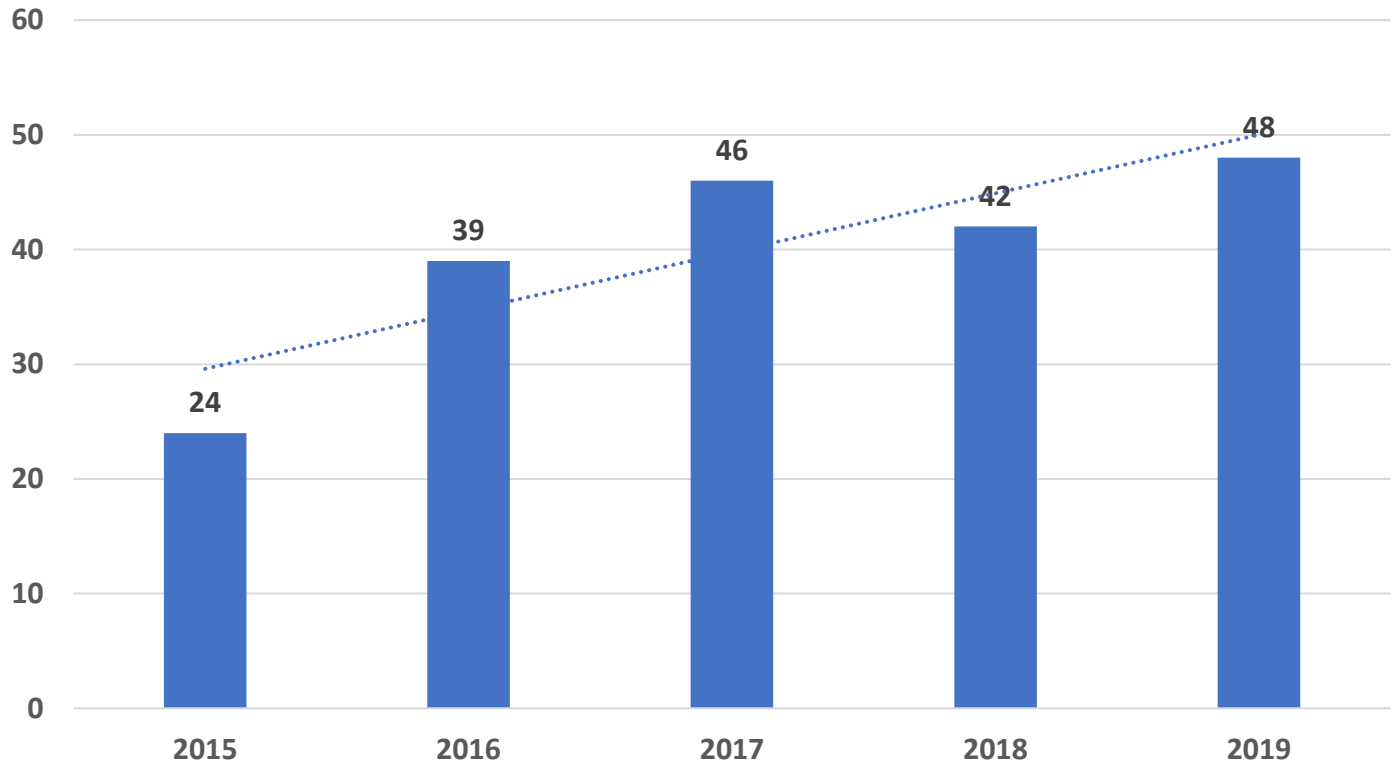
Question No. I&E-GS-007-REV
Respondent: M. Davidson
Page 2 of 2

Original Response:

Please see table below for the number of company and customer owned riser failures for each year, 2015 through 2019.

| Year | Company Owned | Customer Owned |
|-------------|----------------------|-----------------------|
| 2015 | 30 | 1 |
| 2016 | 40 | 2 |
| 2017 | 51 | 1 |
| 2018 | 51 | 19 |
| 2019 | 53 | 3 |

CCOLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Failed Field Assembled Risers on Company-Owned Service Lines
2015 through 2019



CCOLUMBIA GAS OF PENNSYLVANIA, INC.
R-2020-3018835
Failed Field Assembled Riser on Company-Owned Service Lines
2017 through 2019

