



**Lennon, Smith, Souleret
Engineering, Inc.**

Civil Engineers and Surveyors

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Kevin A. Brett, P.E.

November 15, 2017

S. O. No. 0474-08

VIA EMAIL AND U. S. MAIL

Mr. Robert J. Bible, P.E., General Manager
Municipal Water Authority of Aliquippa
160 Hopewell Avenue
Aliquippa, Pennsylvania 15001

**Subject: Consulting Engineer's Report
2016 Operating Year**

Dear Mr. Bible:

Transmitted herewith are seven copies of the subject report. A copy of the report is provided for each Board member. A copy must also be forwarded to the Trustee for the Authority, The Bank of New York Mellon Trust Company, N.A.

Should you have any questions or require any additional information, please call Emily A. Palmer, P.E. or me.

Sincerely,

Ned Mitrovich, P.E.

NM/nlk

Enclosures

**CONSULTING ENGINEER'S
ANNUAL REPORT**

**2016 and 2017 OPERATING YEAR
(through October 31, 2017)**

FOR

**THE MUNICIPAL WATER
AUTHORITY OF ALIQUIPPA
160 HOPEWELL AVENUE
ALIQUIPPA, PENNSYLVANIA 15001**

**OCTOBER 2017
REVISED NOVEMBER 2017**



**Lennon, Smith, Souleret
Engineering, Inc.**

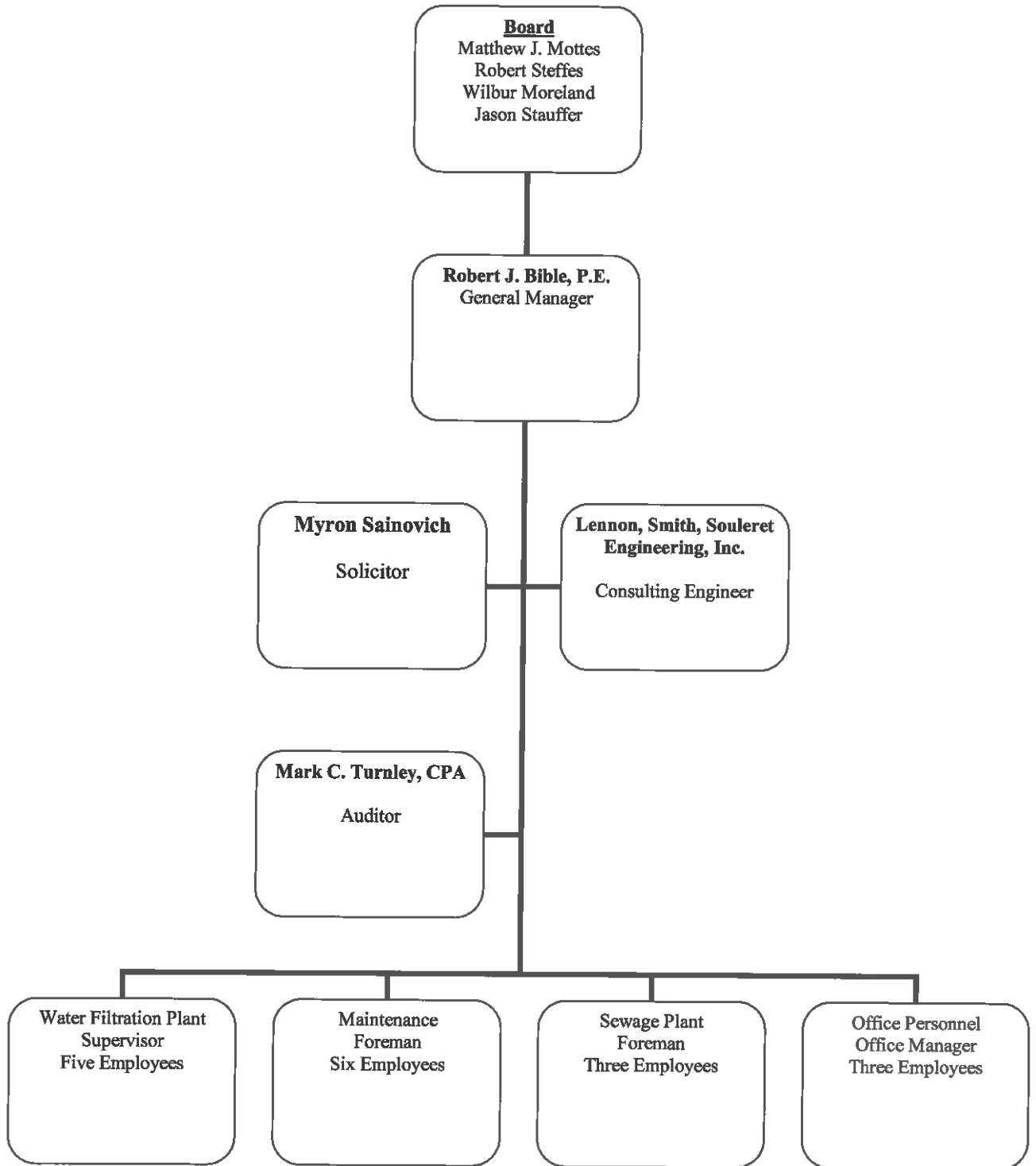
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MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
OCTOBER 2017

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**ORGANIZATIONAL CHART
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
AS OF SEPTEMBER 30, 2017**



MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
Aliquippa, Beaver County, Pennsylvania
724-375-5525
Identification No. 25-6007701

AUTHORITY BOARD MEMBER AS OF SEPTEMBER 30, 2017

Matthew J. Mottes.....Chairman
Robert Steffes.....Vice Chairman
Wilbur Moreland.....Secretary
Jason Stauffer.....Assistant Secretary/Treasurer

PROFESSIONAL APPOINTMENTS

Myron Sainovich.....Solicitor
Bank of New York, Mellon Trust No. N.A.....Trustee
Mark C. Turnley, CPA.....Auditor
WesBanco.....Depository
Lennon, Smith, Souleret Engineering, Inc.....Consulting Engineer

MANAGEMENT

Robert J. Bible, P.E.....General Manager
Denise McCoy.....Office Manager

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT

INTRODUCTION

We are pleased to submit the Consulting Engineer's Report of Operations for Fiscal Year 2016 and through September 30, 2017 for the Municipal Water Authority of Aliquippa (MWAA).

DRINKING WATER SYSTEM

DESCRIPTION OF SYSTEM

The water system serves a population of approximately 10,300 within the City of Aliquippa, Hopewell Township, Potter Township, Shippingport Borough and Raccoon Township.

MWAA is located in Aliquippa, Pennsylvania. The primary source of water consists of six vertical wells (Wells 14, 18, 25, 26, 27, and 28), one Ranney Well, and one Collector Well, each located along the Ohio River. The Ranney Well and the Collector Well combined can pump approximately 4.0 MGD to the treatment plant. The treatment plant has a rated capacity of 4.0 MGD. The vertical wells were previously considered "backup" wells to provide additional capacity as needed. In 2014, the Pennsylvania Department of Environmental Protection (PaDEP) advised this was no longer allowed. The wells now need to be used for supply and sampled/permitted accordingly. In addition to the wells, there is a ready interconnect with the Center Township Water Authority system.

In 2016, Well 18 was repaired. Vertical well renovations are currently under construction for Wells 14, 26, and 27 and are expected to be complete by the end of 2017.

Collector and Ranney well cleaning and servicing is currently in the bidding phase.

The treatment plant process includes iron and manganese removal, softening, and disinfection. The total amount of treated water storage is 9,678,000 gallons of water via seven storage tanks:

- Davidson Heights 1,078,000 Gallon Concrete Reservoir
- Davidson Heights 2,300,000 Gallon Steel Reservoir #1
- Davidson Heights 2,500,000 Gallon Steel Reservoir #2
- Sheffield Terrace 2,000,000 Gallon Steel Reservoir
- West Aliquippa 1,000,000 Gallon Steel Reservoir
- West Aliquippa 500,000 Gallon Reservoir
- Raccoon 300,000 Gallon Reservoir

Lennon, Smith, Souleret Engineering, Inc. has completed design for a new altitude valve for the West Tank as well as the rebuild of the pressure reducing valve (PRV) vault and the installation of a second PRV vault to serve West Aliquippa. The project is currently out to bid. It is anticipated this will stop overflows and reduce leaking currently experienced at the site. This project was initiated as a corrective measure in response to an Inspection Report issued by the Department of Environmental Protection (PaDEP).

Lennon, Smith, Souleret Engineering, Inc. is currently preparing a feasibility study to address upgrades and improvements necessary at the Water Plant to improve iron and manganese removal. Pilot study will be necessary and is currently being coordinated.

Customer water meters were replaced in 2014 and funded with a bond issue. Flow meters at the treatment plant and each of the wells were replaced in 2015 and 2016.

The Water Allocation Permit was renewed in 2014 for the next 50 years. Rules and Regulations were prepared and adopted in 2014.

The Raccoon Tank is the only tank supplying the Raccoon Township service area and provides less than 1 day's supply of potable water. MWAA staff installed meters and repaired valves in the system in 2014.

The distribution system is aging and the condition of the waterlines is commensurate with age. Waterlines are repaired as required to maintain service and stop leaks. Several other projects have been completed or are underway to replace aging waterlines.

- Approximately 3,000 linear feet of waterline was replaced on Edgewood Avenue in Hopewell in 2016.
- Approximately 850 linear feet of waterline was replaced on Adams Street in late 2016.
- A waterline on Golf Course Road was exposed and was replaced in July 2016.

Due to the age of the system, valves are often inoperable or do not properly seat when operated. When valves cannot be operated properly, the distribution system cannot be isolated into small areas to facilitate repair. The result is the temporary shut-down of service to large portions of the system to repair isolated waterline breaks or leaks causing a disruption of service to a large number of customers. Large scale disruptions of service could be more effectively mitigated if the valves were operable and the system could be properly isolated. In October 2016, the Authority made application to the Commonwealth Financing Authority to seek funding through the PA Small Water and Sewer Program to replace many of these inoperable valves. The application was not awarded in the 2016 round. MWAA intends to resubmit the application for the 2017 round. These valve replacements are to increase system isolation capabilities and reduce water service outages for customers. Additionally, eliminating leaks and making repairs to the system will decrease the amount of unaccounted for water within the system.

WATER RATES

Table 1 indicates the current and previous water user rates charged by the MWAA to their customers. Rates were increased effective January 1, 2016 to account for increased costs and to provide for necessary capital improvements. Assuming an average water use of 11,000 gallons per quarter. The water rate is approximately 1.78% of the mean household income based on 2015 U.S. Census data.

**TABLE 1
SCHEDULE OF RATES – QUARTERLY RESIDENTIAL CHARGES**

Current Rate Structure – January 1, 2016	
	Water
First 6,000 gallons	\$75.00 minimum
Over 6,000 gallons	12.50/1,000
Current Rate Structure – January 1, 2007	
	Water
First 6,000 gallons	\$46.27 minimum
Next 12,000 gallons	6.25/1,000
Next 42,000 gallons	5.41/1,000
Over 60,000 gallons	4.66/1,000
Previous Rate Structure – January 1, 2005	
	Water
First 6,000 gallons	\$38.56 minimum
Next 12,000 gallons	5.21/1,000
Next 42,000 gallons	4.51/1,000
Over 60,000 gallons	3.88/1,000
Previous Rate Structure – January 1, 2001	
	Water
First 6,000 gallons	\$34.43 minimum
Next 12,000 gallons	4.652/1,000
Next 42,000 gallons	4.03/1,000
Over 60,000 gallons	3.46/1,000

WATER WITHDRAWAL AND SALES

The data gathered for this section of the report was taken from official reports of MWAA.

The Daily Water Withdrawal/Instream Flow Requirement Report is a report prepared monthly and indicates the total amount of water pumped from the wells to the treatment plant on a daily basis. The Collector Well and Wells 25, 26, 27 and 28 have a common meter that was replaced in 2015. The total combined well output for 2016 was 1,188,705,100 gallons of water. A table has been included in the Water System Appendix using MWAA data which details the monthly water withdrawal from each well.

The Report of Operations records the amount of water coming into the treatment plant and the amount of finished water pumped into the distribution system for sale. In comparison, the raw water that entered the plant measured 1,167,147,700 gallons of water according to the report. The finished water leaving the plant was 1,092,428,500 gallons of water and is measured with a magnetic meter installed in 2015.

The Metered Sales of 365,562,100 gallons plus the estimated 74,259,570 gallons for maintenance and plant use compared to the finished water of 1,092,428,500 gallons pumped to the system indicates that about 40% of the water leaving the plant is not accounted for. This water loss is significant and is suspected to include undetected leaks, fires, and unreported hydrant usage. The Water System Appendix includes tables and charts which detail the above referenced data.

In early 2016, a “Distribution and Storage Control and Leak Repair Plan” was prepared by the Authority. Implementation of the plan is ongoing.

SEWER SYSTEM

DESCRIPTION OF SYSTEM

The MWAA Wastewater Treatment Plant (WWTP) serves both the City of Aliquippa and Hopewell Township. The wastewater treatment plant has a design hydraulic capacity of 3.4 MGD. The maximum wet weather hydraulic capacity is 7.0 MGD. The plant discharges treated effluent to the Ohio River under NPDES Permit (PA0025968)

parameters. The WWTP was not hydraulically or organically overloaded during the 2016 operating year. The Report projects the 3-month maximum average will exceed the average annual design capacity in 2020. The 2016 Annual Wasteload Management Report was completed by MWAA. The hydraulic and organic loading charts from this report are provided in the Sewer Appendix.

The primary clarifier was replaced in 2016.

The NPDES Permit for the system was renewed for another 5 years in 2014. The new permit included a more stringent limit for total residual chlorine (TRC) which was evaluated by the Authority in a feasibility study. The project was bid in October 2017. Installation of a dechlorination facility and a rebuild of the plant's existing bar screen are proposed.

Rules and Regulations were prepared and under review in 2014 and adopted in 2015.

There are seven sewage pump stations that contribute flow to the WWTP.

1. The Wye Lift Station serves Aliquippa and portions of Hopewell Township. It is equipped with four 3,000 gpm pumps powered by 75 HP motors.
2. The West Aliquippa Lift Station serves West Aliquippa and portions of Hopewell Township. It is equipped with two 500 gpm pumps powered by 10 HP motors.
3. The Golf Course Road Lift Station serves the Hospital Drive area. It is equipped with two 160 gpm pumps powered by 15 HP motors.
4. The Jail Pump Station serves the new Beaver County Jail. It is equipped with two 300 gpm pumps powered by 5 HP motors.
5. The Steel Street Lift Station is equipped with two 200 gpm pumps powered by 5 HP motors.
6. The pump station at the Woodlawn Park Area in Hopewell services 11 residential units. The assumed flow at this pump station is 11 gpm, and

was designed to handle 85 gpm. (This pump station is owned and operated by Hopewell Township.)

7. The Woodlawn Pump Station is equipped with two 122 gpm pumps powered by 4 HP motors. Projected average future flows are only 6,000 gpd (30,000 gpd peak). The pumps are not installed at this time, but are stored for future use. There is no electrical power to the pump station presently. It has never been reported to operate.

The collection system is considered a separate sewer system and is relatively old. Its condition is commensurate with age. The system primarily consists of vitrified clay pipe and is subject to inflow and infiltration.

Replacement of the sewer main through the J&L Tunnel was bid in 2017 and is currently under construction.

Sanitary sewer full line of approximately 500 linear feet of sewer line is proposed for the Logstown Run Interceptor. Bids have been opened but the contract has not yet been awarded.

SEWER RATES

Table 2 indicates the current and previous sewer user rates charged by the MWAA to their customers. The last rate increase was in January 2012. Assuming an average water use of 11,000 gallons per quarter, the sewer rate is approximately 0.8% of the mean household income based on 2015 U.S. Census data.

TABLE 2
SCHEDULE OF RATES – QUARTERLY RESIDENTIAL CHARGES

Current Rate Structure – January 1, 2012	
First 6,000 gallons	\$39.08 minimum
Next 12,000 gallons	5.24/1,000
Next 42,000 gallons	4.53/1,000
Over 60,000 gallons	3.62/1,000
Previous Rate Structure – January 1, 2007	
First 6,000 gallons	\$31.26 minimum
Next 12,000 gallons	4.19/1,000
Next 42,000 gallons	3.62/1,000
Over 60,000 gallons	2.89/1,000
Previous Rate Structure – January 1, 2005	
First 6,000 gallons	\$26.05 minimum
Next 12,000 gallons	3.49/1,000
Next 42,000 gallons	3.02/1,000
Over 60,000 gallons	2.41/1,000
Previous Rate Structure – January 1, 2001	
First 6,000 gallons	\$23.26 minimum
Next 12,000 gallons	3.11/1,000
Next 42,000 gallons	2.70/1,000
Over 60,000 gallons	2.15/1,000

FINANCIAL MANAGEMENT

The Financial Management Appendix provides a summary of significant historical data regarding expenses and revenues. The budget format was changed significantly in 2015 to update budget line items to match the current operations of the Authority. The budgets also provide the required Debt Service Ratio calculation in accordance with the Trust Indenture. A ratio of 2.30 was calculated for the 2016 Operating Year. A ratio of 1.12 is projected for the 2017 Operating Year Approved Budget compared to the required ratio of 1.10.

In 2016, a delinquency policy was put in place by the Authority to address outstanding accounts receivable.

MWAA maintains various insurance policies, a listing of which is included in the Financial Management Appendix. As an “appropriate” level of insurance is not an engineering matter, we can only rely on the recommendation of the Authority’s insurance broker regarding the “adequacy” of the insurance coverage.

In September 2017, MWAA refinanced their existing bonds in the amount of \$7,020,000.

SUMMARY AND RECOMMENDATIONS

WATER SYSTEM

- The supply of water appears to be adequate to accommodate current demand and modest expansions of the service area.
- If future demands require treated water in excess of 4.0 MGD, system updates will be required. Continue with proposed repairs of the recently permitted vertical wells.
- Development and implementation of a replacement program for both lines and valves is recommended.
- Storage capacity appears to be adequate for the Aliquippa service area with a total of seven (7) tanks in service.
- The following additional capital improvements are recommended:
 - Map Distribution System
 - Inspect interiors of Water Storage Tanks
 - Conversion of media in the filters to facilitate iron and manganese removal
 - Implement very aggressive leak detection program
 - Integrated SCADA system for wells, water treatment plant, booster stations, and storage facilities
 - Paint the Raccoon Tank

- Install an additional 500,000 gallon tank in the western end of the Raccoon service area.
- Paint the West Aliquippa Tank as recommended in an inspection report from PaDEP.

SEWER SYSTEM

- There appears to be adequate annual average hydraulic and organic capacity for the coming 5-year period at the WWTP. Efforts to reduce infiltration and inflow should be continued to maintain (and increase) this available capacity at the treatment plant and the collection and conveyance system as well.
- Infiltration/Inflow with past rehabilitation of sewer lines within many areas of the City is reported as successful. Continuing efforts to televise, clean and rehabilitate lines should continue. A more aggressive I/I program should be implemented to reduce flow storm response.
- The following additional capital improvements are recommended:
 - Map Collection Systems
 - Upsize Golf Course Road Sewage Pumps
 - Digester Concrete Repairs
 - Integrated SCADA system for sewage pump stations and sewage treatment plant
 - Replace Golf Course Lift Station pumps with new pumps of higher capacity.
 - Slipline the segment of gravity sewer along Golf Course Road.

FINANCIAL MANAGEMENT

- Monitor 2017 and 2018 expenses to ensure debt service factor of 1.10 is provided.
- Continued implementation of the delinquency policy.

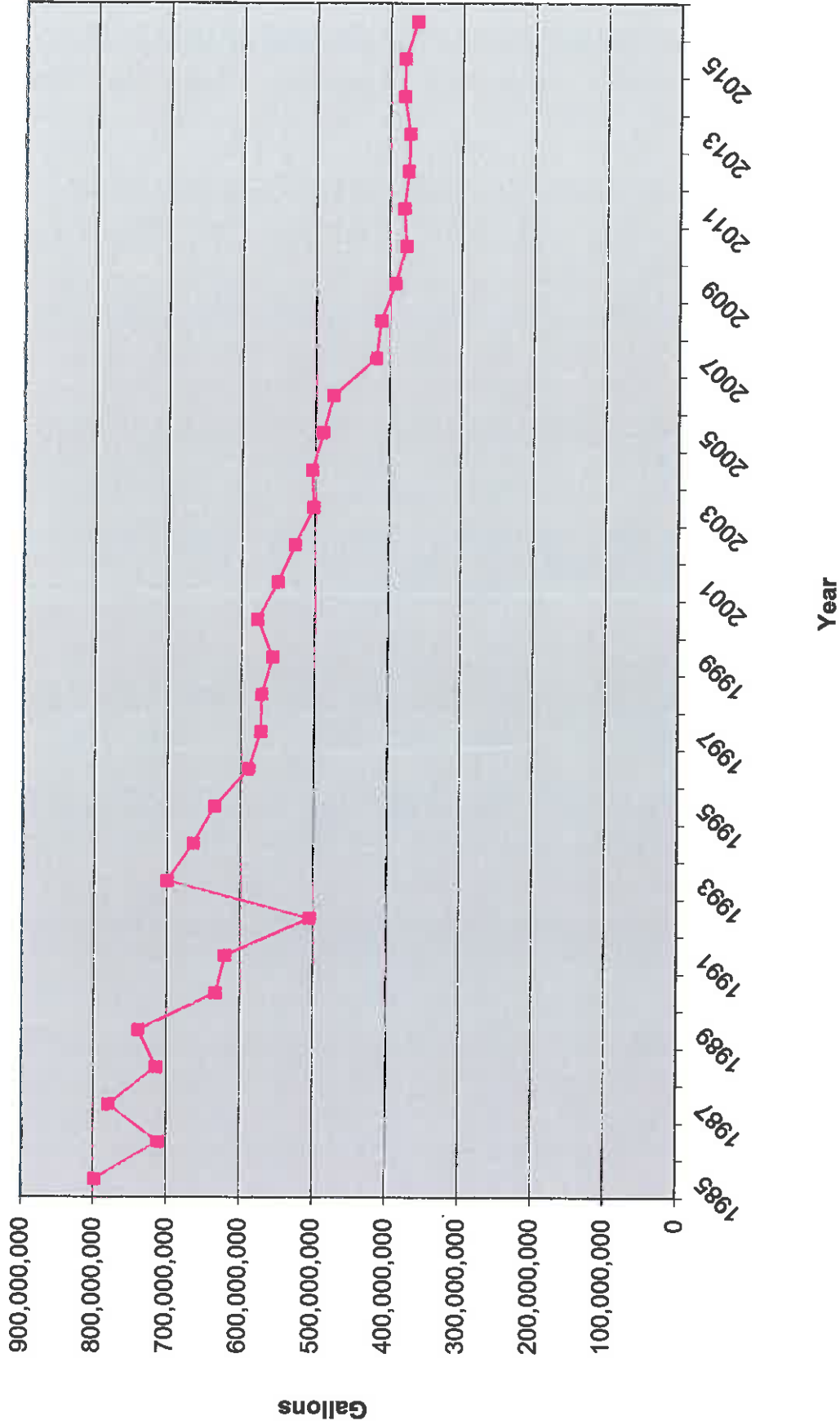
WATER SYSTEM
APPENDIX

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT**

ANNUAL WATER WITHDRAWAL REPORT - 2016

	Rainey Wells							TOTAL MGD	
	Well 23	Collector Well	Well 25 (GALLONS)	Well 26	Well 27	Well 28	Total Well Production		
January	61,690,000	42,000	46,073,200	42,000	0	0	42,000	107,889,200	3.480
February	60,751,800	0	43,914,500	0	0	0	0	104,666,300	3.609
March	64,140,800	0	46,185,400	0	0	0	0	110,326,200	3.559
April	56,109,900	0	40,973,600	0	0	0	0	97,083,500	3.236
May	60,741,100	0	44,012,800	0	0	0	0	104,753,900	3.379
June	57,101,400	0	41,280,400	0	0	0	0	98,381,800	3.279
July	56,587,000	42,000	39,112,100	42,000	0	0	42,000	95,825,100	3.091
August	54,675,400	0	40,568,000	0	0	0	0	95,243,400	3.072
September	49,518,000	0	40,636,500	0	0	0	0	90,154,500	3.005
October	54,945,400	420,000	42,230,100	420,000	0	0	420,000	98,435,500	3.175
November	52,112,200	0	38,208,500	0	0	0	0	90,320,700	3.011
December	54,253,800	0	41,371,200	0	0	0	0	95,625,000	3.085
DAILY AVE.	1,870,210	1381	1,382,373	1,381	0	0	1,381	3,256,726	3.249
TOTAL	682,626,800	504,000	504,566,300	504,000	0	0	504,000	1,188,705,100	

Municipal Water Authority of Aliquippa Annual Metered Water Sales



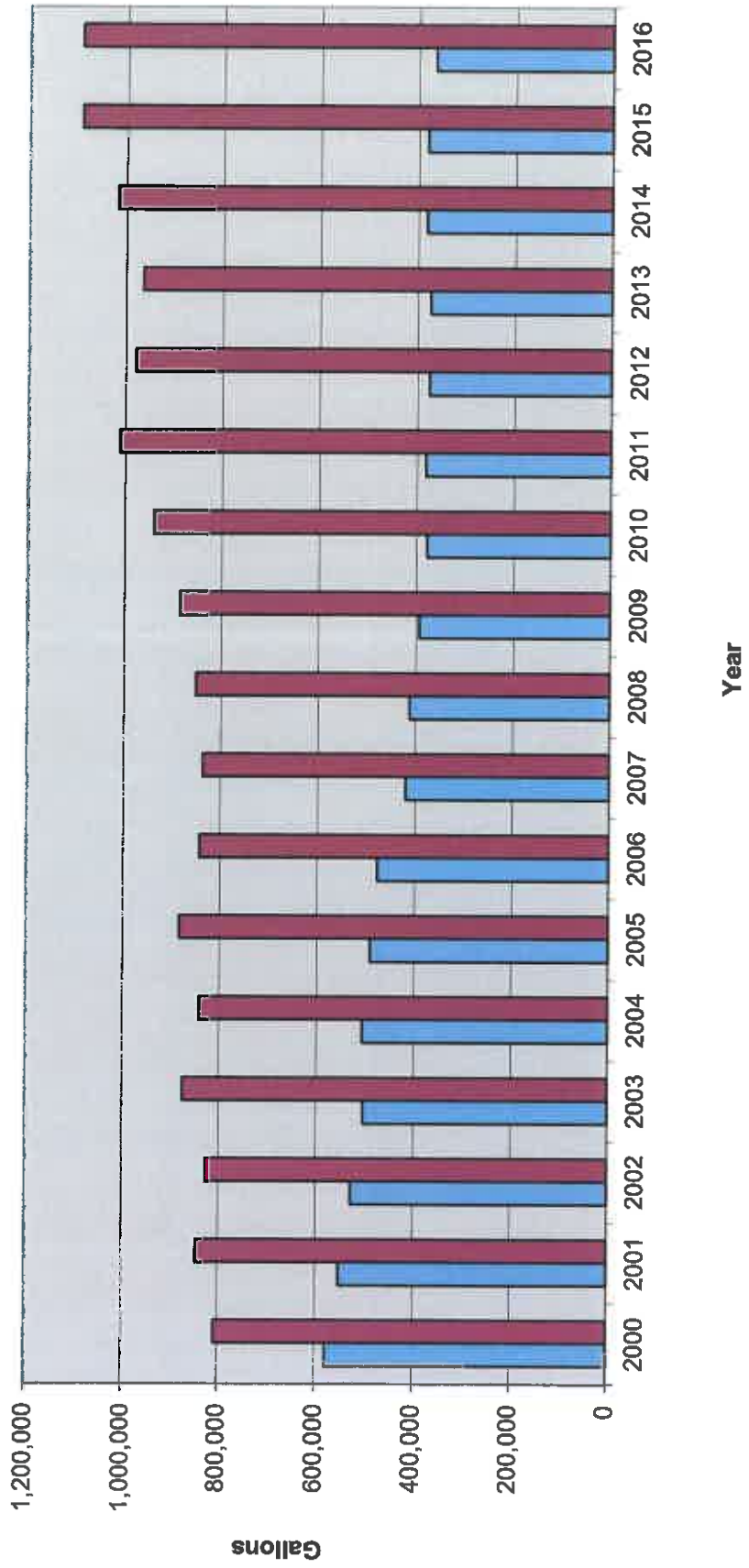
**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT**

**WATER WITHDRAWAL AND SALES
(GALLONS)**

Month	WATER WITHDRAWAL		REPORT OF OPERATIONS				Line Breaks and Flushing ⁽¹⁾	Metered Sales
	Combined Well Output	Raw Water Input	Finished	Finished Output		Total		
				Rinse/Wash	Total			
Jan	107,889,200	107,132,000	89,703,000	6,188,100	95,891,100	6,289,745		
Feb	104,666,300	102,558,000	89,986,000	5,198,500	95,184,500	5,883,955		
Mar	110,326,200	109,415,000	104,064,000	5,498,000	109,562,000	6,289,745		
Apr	97,083,500	95,090,000	91,366,000	4,852,300	96,218,300	6,086,850		
May	104,753,900	104,084,000	98,818,000	5,773,900	104,591,900	6,289,745		
Jun	98,381,800	94,572,700	91,122,500	5,016,800	96,139,300	6,086,850		
Jul	95,825,100	94,470,000	89,128,000	5,046,200	94,174,200	6,289,745		
Aug	95,243,400	93,630,000	89,736,000	5,244,200	94,980,200	6,289,745		
Sept	90,154,500	88,366,000	84,349,000	4,964,700	89,313,700	6,086,850		
Oct	98,435,500	95,324,000	90,381,000	4,976,800	95,357,800	6,289,745		
Nov	90,320,700	89,240,000	84,867,000	4,926,000	89,793,000	6,086,850		
Dec	95,625,000	93,266,000	88,908,000	5,002,500	93,910,500	6,289,745		
TOTAL	1,188,705,100	1,167,147,700	1,092,428,500	62,688,000	1,155,116,500	74,259,570	365,562,100	
DAILY AVG.	3,256,726	3,197,665	2,992,955	171,748	3,164,703	203,451	1,001,540	

(1) Maintenance data includes water used to flush lines after line break repair operations and bi-annual line flushing water. These numbers are estimates only.

**Municipal Water Authority of Aliquippa
Historic Water Sales and Finished Water Produced**



■ Thousand Gallons of Water Billed
■ Thousand Gallons of Finished Water Produced

**SEWER SYSTEM
APPENDIX**

FIGURE 1
HYDRAULIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT

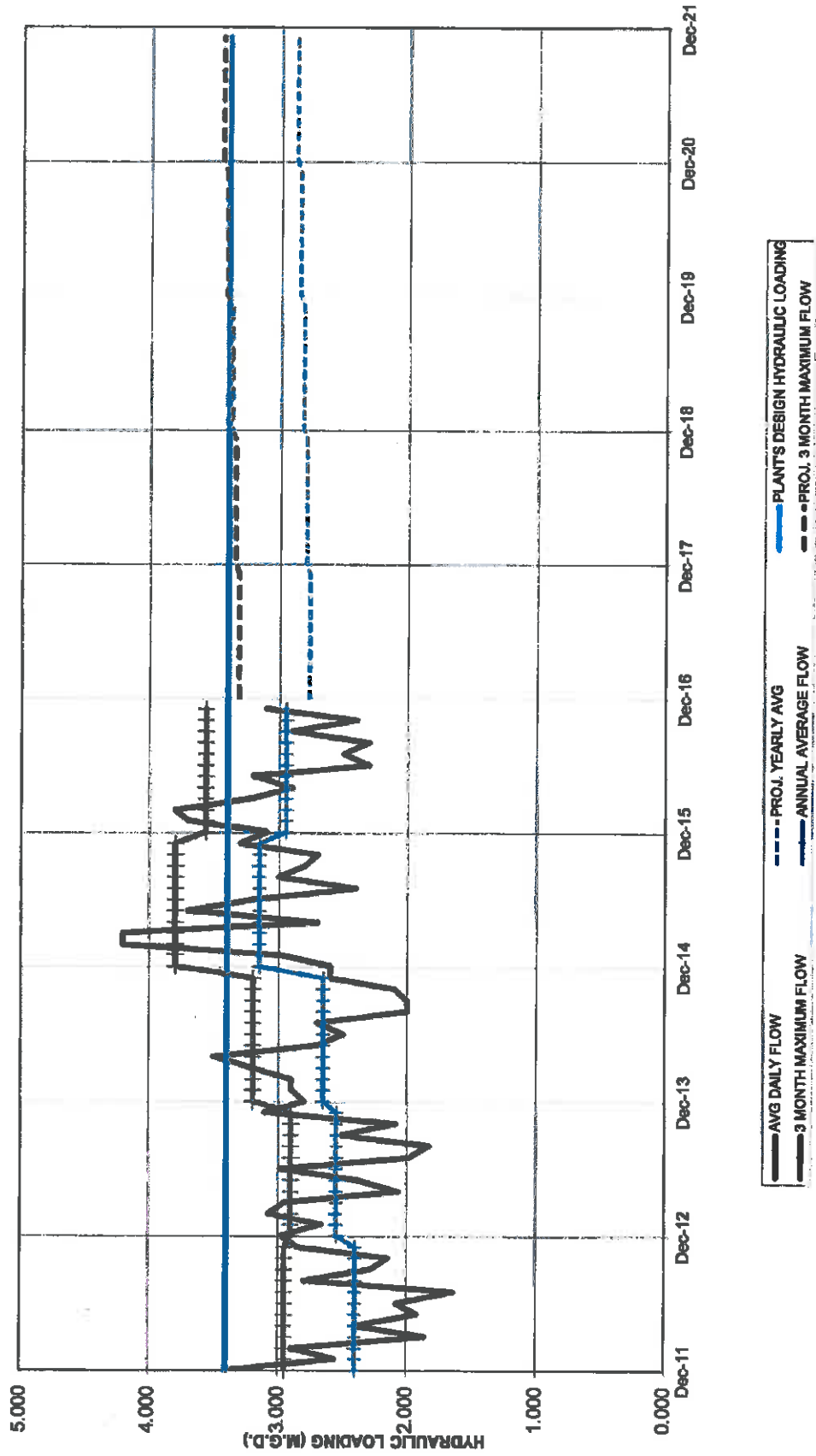
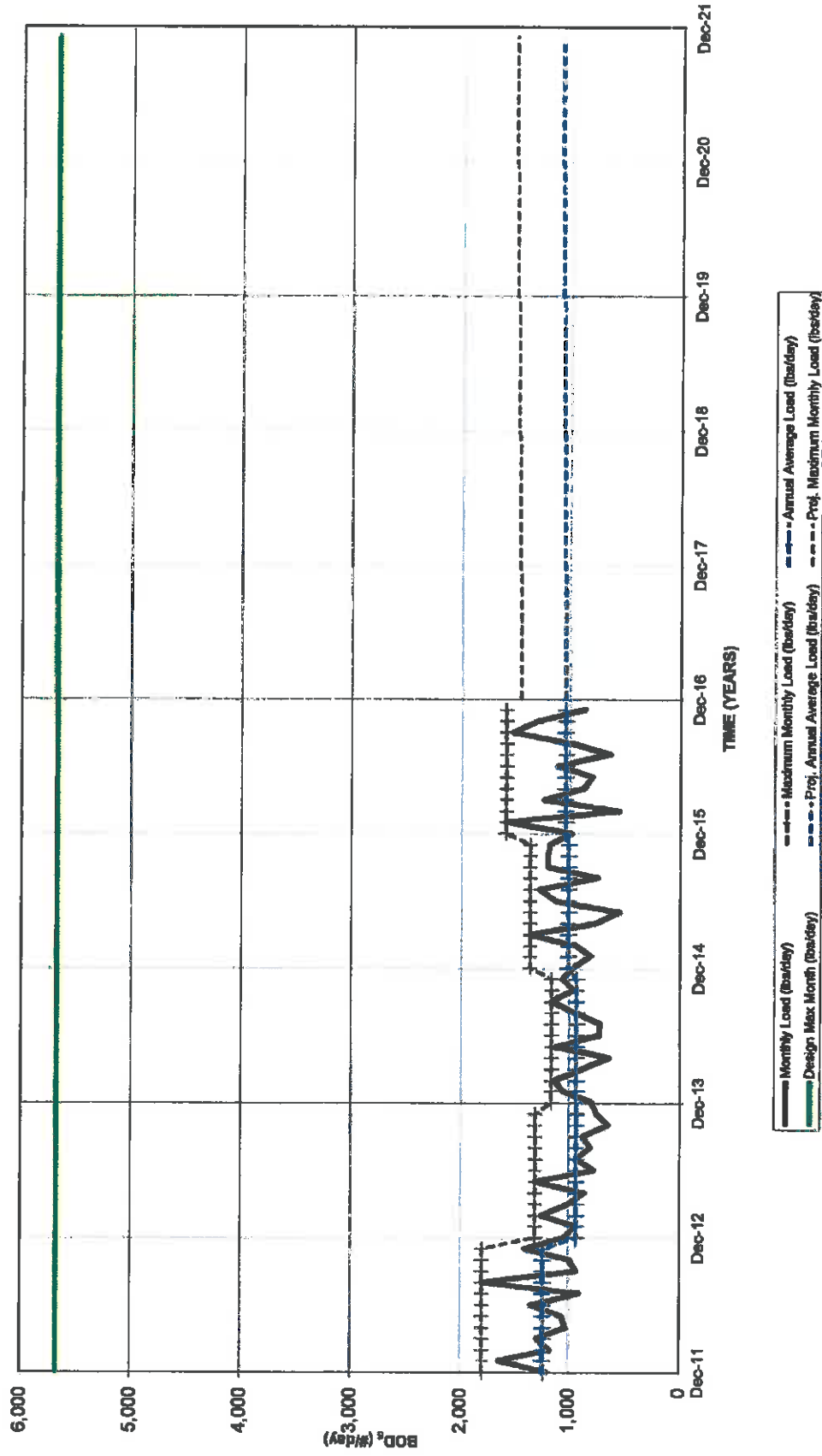


FIGURE 2
ORGANIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT



**FINANCIAL MANAGEMENT
APPENDIX**

**MUNICIPAL WATER AUTHORITY OF ALQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
WATER FUND
BUDGET VS ACTUAL**

	2016 Budget	2016 Actuals	2017 Budget	YTD As Of 8-30-17
Revenue				
<u>Metered Sales</u>				
01.01. 430110	\$2,818,035.00	\$2,891,770.91	\$2,850,000.00	\$1,930,083.09
01.01. 430120	\$713,890.00	\$539,553.76	\$550,000.00	\$349,818.03
01.01. 430130	\$682,301.00	\$540,561.78	\$545,000.00	\$372,980.11
Subtotal	\$4,214,226.00	\$3,971,886.45	\$3,945,000.00	\$2,652,881.23
<u>Fire Protection</u>				
01.01. 430410	\$17,000.00	\$22,907.84	\$20,000.00	\$16,885.12
01.01. 430420	\$300,000.00	\$287,728.68	\$290,000.00	\$178,645.14
Subtotal	\$317,000.00	\$310,636.52	\$310,000.00	\$195,530.26
<u>Other Water Sales</u>				
01.01. 430610	\$30,000.00	\$64,306.75	\$60,000.00	\$47,592.08
Subtotal	\$30,000.00	\$64,306.75	\$60,000.00	\$47,592.08
<u>Miscellaneous Revenue</u>				
01.01. 431210	\$55,000.00	\$92,547.95	\$75,000.00	\$61,259.59
01.01. 412520	\$0.00	\$7,059.60	\$0.00	\$0.00
01.01. 431230	\$0.00	\$6,412.42	\$0.00	\$17,425.00
01.01. 431240	\$5,000.00	\$5,763.12	\$5,000.00	\$3,878.42
Subtotal	\$60,000.00	\$111,783.09	\$80,000.00	\$82,563.01
<u>Misc Non-Operating Revenue</u>				
01.01. 432010	\$1,000.00	-\$5,311.71	\$500.00	\$2,187.00
01.01. 432610	\$10,000.00	\$16,434.50	\$15,000.00	\$12,755.43
01.01. 432630	\$45,760.00	\$43,640.00	\$53,040.00	\$29,430.00
Subtotal	\$56,760.00	\$54,762.79	\$68,540.00	\$44,372.43
Total Revenue	\$4,677,986.00	\$4,513,375.60	\$4,463,540.00	\$3,022,939.01
Expenses				
<u>Power and Pumping</u>				
01.01. 542210	\$15,000.00	\$7,940.72	\$10,000.00	\$765.68
01.01. 542410	\$10,000.00	\$9,461.95	\$10,000.00	\$10,107.42
01.01. 542610	\$25,000.00	\$9,865.31	\$25,000.00	\$515.00
01.01. 542710	\$25,000.00	\$28,870.50	\$25,000.00	\$24,864.38
01.01. 542910	\$1,000.00	\$5,039.81	\$6,000.00	\$530.09
01.01. 542920		\$243,557.46		
01.01. 544910		\$4,538.33		
01.01. 542930	\$42,000.00	\$38,725.05	\$42,000.00	\$29,084.64
01.01. 542950	\$63,000.00	\$62,771.29	\$63,000.00	\$41,871.63
01.01. 542960	\$15,000.00	\$11,966.85	\$15,000.00	\$18,572.04
01.01. 542970	\$20,000.00	\$21,163.15	\$25,000.00	\$252.11
01.01. 542980	\$250.00	\$243.40	\$250.00	\$190.11
Subtotal	\$216,250.00	\$444,143.82	\$221,250.00	\$126,753.10
<u>Purification and Lab</u>				
01.01. 544210	\$146,900.00	\$129,386.99	\$285,000.00	\$117,723.23
01.01. 544220	\$15,000.00	\$8,972.35	\$15,000.00	\$8,079.98
01.01. 544310	\$220,000.00	\$130,583.17	\$150,000.00	\$83,436.77
01.01. 544320	\$8,000.00	\$7,784.21	\$8,000.00	\$5,768.26
01.01. 544410	\$15,000.00	\$6,587.42	\$15,000.00	\$23,631.91
01.01. 544510	\$28,700.00	\$12,309.53	\$25,000.00	\$3,126.76
01.01. 544710	\$2,500.00	\$926.20	\$2,500.00	\$352.32
01.01. 544610	\$105,900.00	\$88,915.24	\$100,000.00	\$79,110.84
01.01. 542920	\$230,000.00		\$250,000.00	\$127,916.97
01.01. 544910	\$8,600.00		\$7,500.00	\$3,950.91
Subtotal	\$780,600.00	\$385,465.11	\$858,000.00	\$453,097.95

		2016 Budget	2016 Actuals	2017 Budget	YTD As Of 8-30-17
<u>Transmission and Distribution</u>					
01.01. 545210	Operations Salaries	\$365,700.00	\$181,628.44	\$268,000.00	\$260,560.84
01.01. 545215	Outside Services	\$10,000.00	\$56,566.61	\$75,000.00	\$111,559.34
01.01. 545310	Maintenance of Lines	\$150,000.00	\$434,286.49	\$250,000.00	\$92,356.28
01.01. 545920	Maintenance of Meters	\$10,000.00	\$61,787.85	\$75,000.00	\$33,857.44
01.01. 545930	Maintenance of Hydrants	\$10,000.00	\$19,597.50	\$25,000.00	-\$3,603.00
01.01. 545710	Maintenance of Structures and Improvements	\$25,000.00	\$191.00	\$25,000.00	\$5,487.96
	Subtotal	\$570,700.00	\$754,057.89	\$718,000.00	\$500,218.86
<u>Vehicles and Equipment</u>					
01.01. 546010	Rentals	\$2,000.00	\$300.00	\$2,000.00	\$100.00
01.01. 546110	Purchase	\$25,000.00	\$22,997.92	\$25,000.00	\$0.00
01.01. 546145	Maintenance	\$20,000.00	\$40,553.58	\$25,000.00	\$5,582.44
01.01. 546155	Fuel	\$15,000.00	\$18,458.32	\$20,000.00	\$11,249.82
	New Trucks #37 & #39				\$5,880.24
	Subtotal	\$62,000.00	\$82,309.82	\$72,000.00	\$22,812.50
<u>General Administration</u>					
01.01. 549010	Board Salaries	\$1,500.00	\$0.00	\$0.00	\$0.00
01.01. 549110	Office Salaries	\$100,000.00	\$79,567.52	\$90,000.00	\$55,567.59
01.01. 549020	Manager's Salary	\$40,000.00	\$82,315.36	\$84,000.00	\$56,876.17
01.01. 549310	Office Supplies and Expenses	\$30,000.00	\$34,159.46	\$30,000.00	\$14,942.00
01.01. 549410	Real Estate Taxes / Sohn Road	\$225.00	\$165.72	\$225.00	\$171.75
01.01. 549510	Auditor	\$3,500.00	\$3,317.00	\$4,000.00	\$3,392.00
01.01. 549890	Solicitor - Retainer	\$3,600.00	\$5,845.25	\$6,500.00	\$2,600.00
01.01. 549870	Solicitor - Expenses	\$9,000.00	\$0.00	\$9,000.00	\$0.00
01.01. 549610	Engineer - Retainer	\$1,200.00	\$1,200.00	\$1,200.00	\$800.00
01.01. 549620	Engineer - Expenses	\$70,000.00	\$17,044.40	\$20,000.00	\$28,454.98
01.01. 549710	Insurance - PIRMA - Auto	\$5,900.00	\$0.00	\$0.00	\$0.00
01.01. 549720	Insurance - PIRMA - General Liability	\$36,000.00	\$21,516.00	\$25,000.00	\$0.00
01.01. 549730	Insurance - Workmen's Compensation	\$32,900.00	\$28,867.90	\$21,500.00	\$23,459.40
01.01. 549740	Insurance - Multi Peril	\$7,500.00	\$14,367.02	\$0.00	\$0.00
01.01. 549750	Insurance - Boiler	\$3,000.00	\$7,540.80	\$0.00	\$0.00
01.01. 549760	Insurance - PIRMA - Public Officials	\$3,400.00	\$0.00	\$0.00	\$0.00
01.01. 549770	Insurance - Property / Equipment	\$10,000.00	\$154.50	\$16,000.00	\$11,359.00
01.01. 549810	Insurance - Bonds	\$0.00	\$400.50	\$0.00	\$300.00
01.01. 549820	Insurance Retirement	\$0.00	\$874.72	\$0.00	\$0.00
01.01. 549830	Hospitalization / Health Insurance	\$420,000.00	\$366,181.55	\$315,000.00	\$225,695.26
01.01. 549840	Employees Pension	\$20,000.00	\$90,826.90	\$104,000.00	\$64,219.62
01.01. 549841	Utilities - Telephone	\$6,300.00	\$5,278.78	\$6,000.00	\$3,874.74
01.01. 549845	Utilities - Power	\$4,300.00	\$4,822.22	\$5,000.00	\$2,527.56
01.01. 549855	Utilities - Gas	\$3,400.00	\$4,248.03	\$3,400.00	\$4,244.58
01.01. 549865	Utilities - Cellular	\$2,160.00	\$2,311.80	\$2,500.00	\$1,943.73
01.01. 549880	Postage	\$8,100.00	\$10,752.43	\$11,000.00	\$8,282.07
01.01. 549885	Uniforms / Clothing Allowance	\$1,200.00	\$4,785.96	\$5,000.00	\$7,313.63
01.01. 549895	Dues, Memberships, Subscriptions	\$900.00	\$1,298.50	\$1,600.00	\$3,514.00
01.01. 549905	Software	\$6,000.00	\$600.00	\$6,000.00	\$0.00
01.01. 549925	Office Equipment	\$2,500.00	\$0.00	\$2,500.00	\$589.50
01.01. 549920	Travel and Education	\$1,500.00	\$625.50	\$1,500.00	\$1,079.00
01.01. 549850	Miscellaneous General Expenses	\$38,000.00	\$21,697.23	\$25,000.00	\$18,654.92
01.01. 549860	Maintenance - Property	\$7,000.00	\$2,954.99	\$7,000.00	\$0.00
	Subtotal	\$879,085.00	\$813,720.04	\$802,925.00	\$539,861.50
<u>Capital Improvements</u>					
01.01. 545970	Capital Improvements	\$950,238.69	\$407,163.93	\$521,521.70	\$172,562.95
01.01.	Capital Improvements - Raccoon	\$0.00	\$0.00	\$0.00	\$0.00
	Subtotal	\$950,238.69	\$407,163.93	\$521,521.70	\$172,562.95
<u>Debt Service</u>					
01.01. 549955	2013 Bond Issue	\$153,655.00	\$184,368.30	\$175,000.00	\$114,994.05
01.01. 549960	2003 / 1998 Bond Issue	\$684,000.00	\$411,113.23	\$718,586.00	\$308,675.35
01.01. 549915	Debt Service Coverage	\$83,765.50	\$0.00	\$89,358.60	\$0.00
01.01. 549970	2001 Pennvest Loan No. 88002	\$284,302.00	\$284,302.44	\$285,000.00	\$189,534.96
01.01. 546130	ESB 2011 Chevy Truck Loan (#36)	\$6,504.47	\$6,033.43	\$0.00	\$0.00
01.01. 546140	ESB 2011 Ford Truck Loan (#34)	\$4,606.90	\$4,146.76	\$0.00	\$0.00
01.01. 546150	ESB 2013 Ford Truck Loan (#35)	\$2,278.44	\$2,278.44	\$1,898.70	\$1,518.96
	Subtotal	\$1,219,112.31	\$892,242.60	\$1,269,843.30	\$614,723.32
	Total Expenses	\$4,677,986.00	\$3,779,103.21	\$4,463,540.00	\$2,430,030.18
	Net Income	\$0.00	\$734,272.39	\$0.00	\$592,908.83

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
SEWER FUND
BUDGET VS ACTUAL**

		2016 Budget	2016 Actuals	2017 Budget	YTD As Of 8-30-17
Revenue					
<u>Metered Sales</u>					
01.02. 430110	Metered Sales - Domestic	\$890,000.00	\$864,218.21	\$875,000.00	\$576,040.00
01.02. 430120	Metered Sales - Commercial	\$200,000.00	\$188,240.08	\$205,000.00	\$100,453.00
01.02. 430130	Metered Sales - Industrial	\$35,000.00	\$27,285.80	\$30,000.00	\$5,316.00
01.02. 430140	Sales to Public Agencies	\$150,000.00	\$154,582.10	\$165,000.00	\$73,027.00
	Subtotal	\$1,275,000.00	\$1,234,326.19	\$1,275,000.00	\$754,836.00
<u>Public Authorities</u>					
01.02. 430610	Sales to Public Authorities (Hopewell)	\$470,000.00	\$469,037.20	\$470,000.00	\$327,731.00
	Subtotal	\$470,000.00	\$469,037.20	\$470,000.00	\$327,731.00
<u>Miscellaneous Revenue</u>					
01.02. 431110	Customer Penalties	\$35,000.00	\$71,940.12	\$35,000.00	-\$12,712.00
01.02. 431620	Sewer Tap Fees	\$0.00	\$2,000.00	\$0.00	\$10,069.00
01.02. 431630	Employee Contribution	\$11,440.00	\$11,240.00	\$12,480.00	\$8,080.00
	Subtotal	\$46,440.00	\$85,180.12	\$47,480.00	\$5,437.00
	Total Revenue	\$1,791,440.00	\$1,788,543.51	\$1,792,480.00	\$1,088,004.00
Expenses					
<u>Collection System</u>					
01.02. 540510	Maintenance of Collection System	\$55,000.00	\$31,120.50	\$55,000.00	\$40,069.00
01.02. 540610	Capital improvements	\$0.00	-\$570.00		\$0.00
01.02. 544515	Outside Services	\$50,000.00	\$23,934.93	\$50,000.00	\$25,355.00
	Subtotal	\$105,000.00	\$54,485.43	\$105,000.00	\$65,424.00
<u>Treatment Plant and Pump Stations</u>					
01.02. 542410	Utilities - Power - Treatment Plant	\$41,000.00	\$34,918.56	\$41,000.00	\$23,476.00
01.02. 542420	Utilities - Power - West LS	\$1,700.00	\$1,568.08	\$1,700.00	\$980.00
01.02. 542430	Utilities - Power - Wye LS	\$42,000.00	\$37,310.86	\$42,000.00	\$28,724.00
01.02. 542440	Utilities - Power - Golf Course LS	\$2,700.00	\$2,394.77	\$3,000.00	\$1,353.00
01.02. 545710	Utility - Gas - Treatment Plant	\$18,000.00	\$11,707.50	\$18,000.00	\$10,527.00
01.02. 542450	Utilities - Power - Steel Street LS	\$150.00	\$0.00	\$150.00	\$0.00
01.02. 542460	Utilities - Power - Jail LS	\$1,000.00	\$1,214.89	\$1,500.00	\$995.00
01.02. 542510	SUPPLIES	\$0.00	\$0.00		\$0.00
01.02. 542710	Non-Salary Compensation / Meals	\$0.00	\$656.35	\$800.00	\$6,662.00
01.02. 542810	Maintenance of Pump Stations	\$15,000.00	\$22,486.46	\$20,000.00	\$17,172.00
01.02. 544210	Operations Salaries	\$215,000.00	\$193,333.35	\$305,000.00	\$171,998.00
01.02. 544220	Testing / Sampling	\$13,000.00	\$15,799.35	\$17,000.00	\$8,481.00
01.02. 544310	Supplies	\$20,000.00	\$8,020.62	\$20,000.00	\$2,324.00
01.02. 544320	Chlorine	\$12,000.00	\$5,620.00	\$10,000.00	\$3,209.00
01.02. 545215	Outside Services	\$5,000.00	\$0.00	\$5,000.00	\$29,828.00
01.02. 544510	Maintenance of Structures	\$1,000.00	\$0.00	\$1,000.00	\$0.00
01.02. 544610	Maintenance of Plant Equipment	\$25,000.00	\$0.00	\$25,000.00	\$15,282.00
01.02. 544710	Sludge Processing and Disposal	\$17,500.00	\$699.99	\$17,500.00	\$46,083.00
	Subtotal	\$430,050.00	\$335,730.78	\$528,650.00	\$367,094.00

	2016 Budget	2016 Actuals	2017 Budget	YTD As Of 8-30-17
<u>Vehicles and Equipment</u>				
01.02. 546110 Outside Services	\$1,000.00	\$16,420.35	\$15,000.00	\$5,880.00
01.02. 546010 Rentals	\$500.00	\$0.00	\$500.00	\$0.00
01.02. 546145 Maintenance	\$7,500.00	\$2,222.56	\$7,500.00	\$1,494.00
01.02. 546155 Fuel	\$3,000.00	\$1,990.19	\$3,000.00	\$1,754.00
Subtotal	\$12,000.00	\$20,633.10	\$26,000.00	\$9,128.00
<u>General Administration</u>				
01.02. 549010 Board Salaries	\$1,500.00	\$0.00	\$0.00	\$0.00
01.02. 549110 Office Salaries	\$100,000.00	\$77,507.89	\$107,000.00	\$55,568.00
01.02. 549120 Manager's Salary	\$40,000.00	\$82,315.23	\$84,000.00	\$53,665.00
01.02. 549310 Office Supplies and Expenses	\$30,000.00	\$21,960.31	\$30,000.00	\$9,763.00
01.02. 549510 Auditor	\$3,500.00	\$3,477.00	\$4,000.00	\$3,392.00
01.02. 549610 Engineer - Retainer	\$1,200.00	\$1,200.00	\$1,200.00	\$800.00
01.02. 549620 Engineer - Expenses	\$50,000.00	\$35,664.80	\$35,000.00	\$14,752.00
01.02. 549710 Insurance - PIRMA - Auto	\$650.00	\$0.00	\$0.00	\$0.00
01.02. 549720 Insurance - PIRMA - General Liability	\$36,000.00	\$21,516.00	\$25,000.00	\$0.00
01.02. 549730 Insurance - Workmen's Compensation	\$14,100.00	\$19,886.10	\$21,500.00	\$15,640.00
01.02. 549740 Insurance - Multi Peril	\$7,500.00	\$1,411.00	\$0.00	\$0.00
01.02. 549750 Insurance - Boiler	\$3,000.00	\$1,885.20	\$0.00	\$0.00
01.02. 549760 Insurance - PIRMA - Public Officials	\$3,400.00	\$0.00	\$0.00	\$0.00
01.02. 549770 Insurance - Property / Equipment	\$10,000.00	\$0.00	\$16,000.00	\$10,203.00
01.02. 549810 Insurance	\$0.00	\$10,645.02	\$0.00	\$0.00
01.02. 549820 Insurance Retirement	\$0.00	\$374.88	\$0.00	\$18,027.00
01.02. 549830 Hospitalization / Health Insurance	\$180,000.00	\$102,910.37	\$315,000.00	\$70,621.00
01.02. 549840 Employees Pension	\$4,000.00	\$24,492.18	\$78,000.00	\$0.00
01.02. 549841 Utilities - Telephone	\$12,000.00	\$14,813.46	\$15,000.00	\$10,411.00
01.02. 549850 Miscellaneous General Expenses	\$7,000.00	\$8,430.37	\$7,000.00	\$6,968.00
01.02. 549855 Utilities - Gas	\$3,400.00	\$0.00	\$3,400.00	\$0.00
01.02. 549865 Utilities - Cellular	\$1,600.00	\$2,311.76	\$2,500.00	\$1,944.00
01.02. 549885 Uniforms / Clothing Allowance	\$800.00	\$1,298.81	\$1,500.00	\$2,906.00
01.02. 549860 Maintenance - Property	\$9,000.00	\$22,571.31	\$15,000.00	\$2,282.00
01.02. 549880 Postage	\$8,100.00	\$8,437.43	\$8,100.00	\$8,215.00
01.02. 549895 Dues, Memberships, Subscriptions	\$900.00	\$229.50	\$500.00	\$0.00
01.02. 549905 Software	\$6,000.00	\$600.00	\$6,000.00	\$0.00
01.02. 549920 Travel and Education	\$1,000.00	\$0.00	\$1,000.00	\$589.00
01.02. 549925 Office Equipment	\$2,500.00	\$282.50	\$2,500.00	\$207.00
01.02. 549420 Solicitor - Expenses	\$6,000.00	\$750.00	\$6,000.00	\$0.00
01.02. 549890 Solicitor - Retainer	\$3,600.00	\$6,660.75	\$7,200.00	\$2,600.00
Subtotal	\$546,750.00	\$471,631.87	\$792,400.00	\$288,553.00
<u>Capital Improvements</u>				
01.02. 540620 Capital Improvements	\$526,341.06	\$190,199.80	\$140,000.00	\$22,576.00
Subtotal	\$526,341.06	\$190,199.80	\$140,000.00	\$22,576.00
<u>Debt Service</u>				
01.02. 549955 2013 Bond Issue	\$153,655.00	\$122,912.20	\$175,000.00	\$76,663.00
2003/1998 Bond Issue				\$205,783.00
01.02. 549915 Debt Service Coverage	\$15,365.50	\$0.00	\$17,500.00	\$0.00
01.02. 549970 ESB 2013 Ford Truck Loan	\$2,278.44	\$2,278.44	\$1,898.70	\$1,519.00
Subtotal	\$171,298.94	\$125,190.64	\$194,398.70	\$283,965.00
Total Expenses	\$1,791,440.00	\$1,197,871.62	\$1,786,448.70	\$1,036,740.00
Net Income	\$0.00	\$590,671.89	\$6,031.30	\$51,264.00

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
DEBT SERVICE COVERAGE FACTOR CALCULATION
2016 ACTUAL BUDGET**

	<u>REVENUES</u>	<u>EXPENSES</u> ⁽¹⁾	<u>NET INCOME / (LOSS)</u>
WATER	\$ 4,513,376	\$ 2,886,861	\$ 1,626,515
SEWER	\$ 1,788,544	\$ 1,072,681	\$ 715,863
	\$ 6,301,919	\$ 3,959,542	\$ 2,342,378

<u>DEBT SERVICES:</u>	<u>2016 Payments</u>
2016 Debt Service Payments	\$ 1,017,433
TOTAL ANNUAL DEBT SERVICE PAYMENT	\$ 1,017,433
TOTAL ANNUAL DEBT SERVICE COVERAGE ⁽²⁾	\$ -
NET REVENUE ⁽³⁾	\$ 2,342,378
2016 BUDGETED COVERAGE FACTOR	2.30
REQUIRED COVERAGE FACTOR	1.10

⁽¹⁾ Excludes Depreciation and Debt Service

⁽²⁾ Debt Service Coverage for Bond Issue based on 2016 budget

⁽³⁾ Includes Net Income/(Loss) plus Debt Service Coverage

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
DEBT SERVICE COVERAGE FACTOR CALCULATION
2017 APPROVED BUDGET**

	<u>REVENUES</u>	<u>EXPENSES</u> ⁽¹⁾	<u>NET INCOME / (LOSS)</u>
WATER	\$ 4,463,540	\$ 3,244,428	\$ 1,219,112
SEWER	\$ 1,792,480	\$ 1,592,050	\$ 200,430
	\$ 6,256,020	\$ 4,836,478	\$ 1,419,542

<u>DEBT SERVICES:</u>	<u>2016 Payments</u>
2017 Debt Service Payments	\$ 1,357,383
TOTAL ANNUAL DEBT SERVICE PAYMENT	\$ 1,357,383
TOTAL ANNUAL DEBT SERVICE COVERAGE ⁽²⁾	\$ 106,859
NET REVENUE ⁽³⁾	\$ 1,526,401
2017 BUDGETED COVERAGE FACTOR	1.12
REQUIRED COVERAGE FACTOR	1.10

⁽¹⁾ Excludes Depreciation and Debt Service

⁽²⁾ Debt Service Coverage for Bond Issue based on 2017 budget

⁽³⁾ Includes Net Income/(Loss) plus Debt Service Coverage

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

Year 2017/2018 – Schedule of Insurance

POLICY	% WATER	% SEWER	PREMIUM AMOUNT	DATE
Selective Insurance Company – Commercial Property Policy No. 2242201	50	50	\$33,396.00	07/05/17 – 07/05/18
Selective Insurance Company – Inland Marine Policy No. 2242201	50	50	\$1,636.00	07/05/17 – 07/05/18
Selective Insurance Company – Crime Policy No. 2242201	50	50	\$660.00	07/05/17 – 07/05/18
State National Insurance – Auto Policy No. BPF-AU-101194-01	50	50	\$6,552.00	10/19/17 – 10/19/18
Selective Insurance Company – Workers Compensation Policy No. WC 9036360	50	50	\$48,152.00	08/01/17 – 08/01/18
State National Insurance – General Liability Policy No. BPF-PK- 101194-01	50	50	\$39,957.00	10/19/17 – 10/19/18
BCS Insurance Company – Cyber Policy No. RPS-P-0285408	50	50	\$2,509.00	10/19/17 – 10/19/18