

EXHIBIT D

MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH WATER SYSTEM ENGINEERING ASSESSMENT AND ORIGINAL COST

*Borough of Shenandoah
Schuylkill County, PA*

Prepared for:

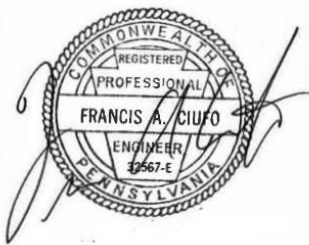
Borough of Shenandoah
15 W Washington Street
Shenandoah, PA 17976

Aqua Pennsylvania, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

Municipal Authority of the Borough of Shenandoah
424 Raven Run Road
Shenandoah, PA 17976

Submitted By:

Pennoni Associates Inc.
1900 Market St, Suite 300
Philadelphia, PA 19103



Frank A. Ciuffo, PE
Pennoni Associates Inc.

CONTENTS

1. EXECUTIVE SUMMARY.....	1
2. PURPOSE OF REPORT	2
3. SYSTEM DESCRIPTION	4
4. INVENTORY OF ASSETS.....	5
4.1 WATER TREATMENT PLANT	5
4.2 DAMS	20
4.3 BOOSTER PUMP STATIONS	28
4.4 STORAGE TANKS	37
4.5 PRESSURE REDUCING VALVE (PRV) VAULTS	44
4.6 DISTRIBUTION SYSTEM	48
4.7 OTHER FACILITIES	49
5. OWNED PROPERTY & EASEMENTS OF VALUE.....	52
6. REGULATORY REQUIREMENTS.....	53
7. LIST OF ASSETS AND COSTS.....	54

APPENDICES

APPENDIX A – SYSTEM MAPS

- Shenandoah Water Facilities

APPENDIX B

- Uniform System of Accounts for Class A Water Utilities
- PA ACT 12 of 2016

APPENDIX C – SUPPORTING DOCUMENTS

- Contract II - Construction of 1.0MG Kehly Run Steel Reservoir
- Contract – Construction of 12-inch Water Transmission Main from Raven Run WTP to Coal Street
- Contract IV – Electrical Work related to the Construction of the Shenandoah WTP
- Limited Scope Valuation Study, dated November 2016
- Maintenance Building Property Information
- PS #5 and Caretaker House Property Information
- Raven Run Dam #2 Construction Information
- Raven Run Dam #3 Construction Information
- Contract – Repaint 0.5 MG Shenandoah Heights Standpipe
- Ringtown Dam #5 & #6 Construction Information
- Warehouse Building Property Information

1. EXECUTIVE SUMMARY

As required by PA Act 12 of 2016 and following the guidelines of the “Uniform System of Accounts for Class A Water Utilities”, an assessment of the tangible assets of facilities and equipment of the Borough and/or the Municipal Authority of the Borough of Shenandoah (“MABS”), each of which are Sellers under the Asset Purchase Agreement has been prepared as part of the asset purchase agreement with Aqua Pennsylvania, Inc. (Aqua). Each facility and class of equipment was coded based on Section 300 of the “Water Utility Plant Accounts” of the Guidelines. The Asset Survey included the Water Treatment Plant, four public water supply reservoirs, four water storage tanks, four booster stations, two pressure reducing stations and approximately 48 miles of water mains for public water use. Asset cost information was derived from various sources and referenced/cited accordingly. Site visits to each of the facilities were conducted to inventory the equipment and assess conditions.

Site inventories and facility conditions were documented on facility information sheets and summarized in the facility description summaries.

Conditions of the above ground facilities varies from fair to very good based on the age and/or completion of recent improvements.

The condition of the water distribution system was not determined. The piping installation period ranges from approximately the late 1885 to 2020.

A complete list of the assets and available original costs with basis is provided in Section 7 of this report.

2. PURPOSE OF REPORT

The purpose of this report is to “conduct an assessment of the tangible assets of the selling utility” per the requirements of PA Act 12 of 2016.

This engineering assessment will be used by the Utility Value Experts (UVEs) retained by both the seller (Borough of Shenandoah and MABS) and buyer (AQUA). The engineering assessment followed the practices and procedures of the Public Utility Commission (PUC) and National Association of Regulatory Utility Commissioners (NARUC) Systems of Accounts. The engineering assessment report documents the conditions and original costs of the Municipal Authority of the Borough of Shenandoah assets that will be used as the common list for the UVEs to develop their appraisal of the system.

The report preparation process included meeting with key Borough, MABS and Aqua representatives to identify and confirm specific information needed to support the assessment and to prepare the report, providing a mutually agreed upon scope of work with the Borough of Shenandoah and Aqua. The inventory is a compilation of data gathered by the Borough, MABS and Pennoni, developed from institutional knowledge, available records, maps, work orders, payment records from construction projects, GIS collection, site evaluations, and other sources to provide an inventory and listing.

This report contains the following:

- An inventory of the used and useful assets to be transferred, compiled by year and account (codes).
- A list of non-depreciable property such as land and rights-of-way.
- A review of system components, plans, and reports of key facilities. This includes:
 - Water Treatment Plant
 - Water Distribution System
 - Storage Tanks
 - Dams
 - Permitted discharges and withdrawals, including regulatory requirements
- Summary of the operation and maintenance expenses based upon review of Borough operating records.
- An assessment of the identified assets.
- Determination and/or establishment of an original cost of construction for each asset.

Assets were identified through various sources. Water main sizes and quantities were taken from GIS and project drawings. Booster Pump Stations and tanks were field inventoried and evaluated; and, supplemented with information obtained from drawings, where available. Asset costs are based on Construction Escrow Releases/Estimates where available or estimated current cost and back calculated to the year of installation using the ENR Construction Cost Index.

A coding system as described in Section 300 of the Uniform System of Accounts for Class A Water Utilities was used for classifying various assets. Section 300 as well as the listing of codes can be found in Appendix B.

3. SYSTEM DESCRIPTION

System Summary

The Municipal Authority or the Borough of Shenandoah is responsible for the clean, safe, and adequate distribution of approximately 574 million gallons per year of drinking water to approximately 2,900 existing residential, commercial, and institutional accounts in the Borough of Shenandoah, West Mahanoy Township, Butler Township and Girardville Borough in Schuylkill County. The public water system is supplied by Authority-owned reservoirs. A map of the water system is located in Appendix A. The Authority owns and operates the Shenandoah Water Treatment plant, four public water supply reservoirs, four water storage tanks, four booster stations, two pressure reducing stations and approximately 48 miles of water mains for public water use.

4. INVENTORY OF ASSETS

4.1 WATER TREATMENT PLANT

The Shenandoah Water Treatment Plant (WTP) is owned and operated by the Municipal Authority of the Borough of Shenandoah and is located at 424 Raven Run Road, south of the Raven Run Reservoir No. 3, approximately 1.5 miles due west of the Borough of Shenandoah. The WTP provides water to Shenandoah, Shenandoah Heights, Turkey Run and numerous other locations as far west as Girardville.

The Water Treatment Plant (WTP) complex was constructed in 1993 and consists of the Main Treatment Building, the High Service Pump Station and an 850,000-gallon Ground Storage Tank. The WTP is designed to treat 3.1 million gallons per day (MGD) of raw water with a hydraulic capacity of 4.0 MGD. The treatment process consists of the following:

- Lime, Alum, Sodium Hydroxide, Alum, Activated Carbon, Potassium Permanganate and Zinc Orthophosphate addition for treatment
- 4 Adsorption Clarifiers
- 4 Mixed Media Filters
- 6 Sludge Drying Beds
- Inclined Plate Settler for sludge
- Chlorine Gas for disinfection

The main treatment building also includes a laboratory, the Authority offices and conference room. A former Chemical Addition Building is located at the driveway entrance to the treatment complex (at the intersection of Raven Run Road). The building is no longer used for chemical addition; however, the building still houses piping from the Raven Run Reservoirs.

The Treatment Plant, Storage Tank and High End Pump Station are in good condition.



Figure 1 – Front of Treatment Building

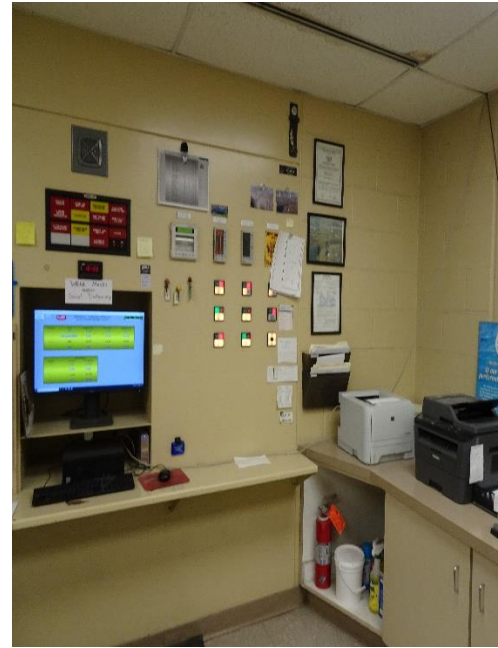


Figure 2 – Operator's Office



Figure 3 – Operator's Office



Figure 4 – Lab



Figure 5 – Lab



Figure 6 – Office Conference Room



Figure 7 – Administrative Office Area



Figure 8 – Lunch Room

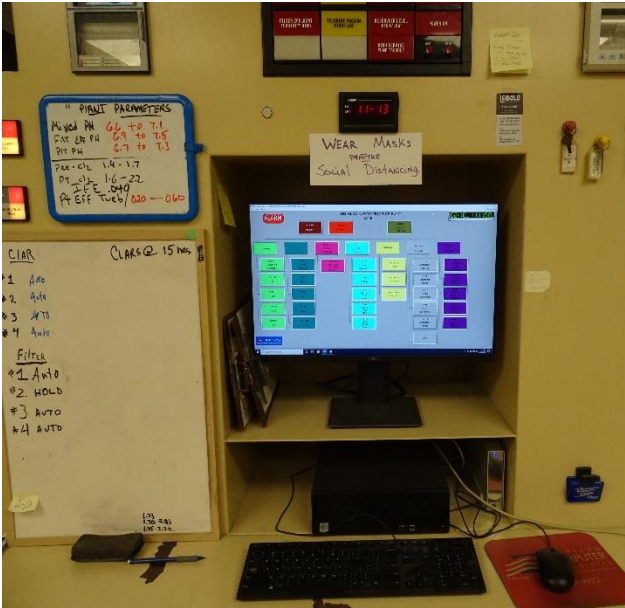


Figure 9 – SCADA Display



Figure 10 – Magnifloc Dosing Station



Figure 11 – Lime Mixing System



Figure 12 – Boilers



Figure 13 – Plate Separator

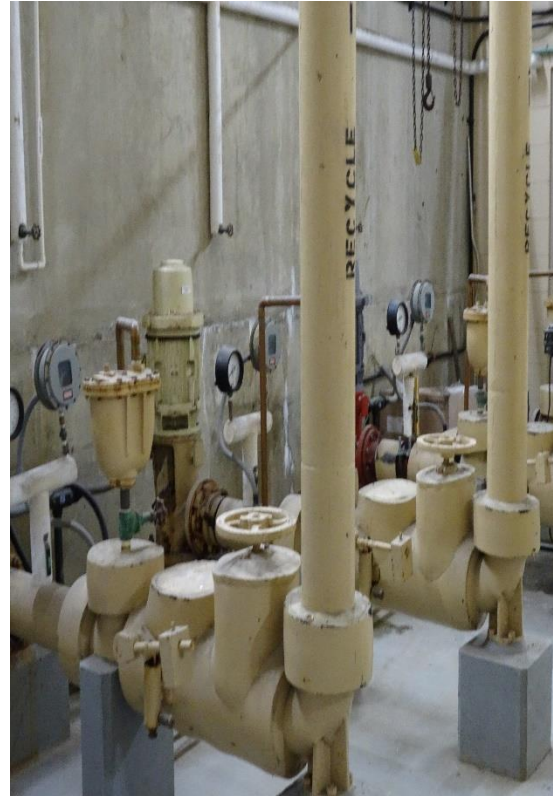


Figure 14 – Plate Separator Pumps



Figure 15 – Blower Room



Figure 16 – Potassium Permanganate dosing system



Figure 17 – Sodium Hydroxide Storage



Figure 18 – Carbon Dosing Room



Figure 19 – Alum Storage Tank



Figure 20 – Pipe Gallery



Figure 21 – Turbidity Meter



Figure 22 – Turbidity Read-Out



Figure 23 – Clarifier / Sand Filter Room



Figure 24 – Control Panel



Figure 25 – Sand Filter



Figure 26 – Plant Electrical Room



Figure 27 – Plant Electrical Room



Figure 28 – Chlorine Dosing Room



Figure 29 – Chlorine Storage Tanks



Figure 30 – Rear of Treatment Building



Figure 31 – Heating Oil Tanks



Figure 32 – Sand Filters



Figure 33 – Sand Filters



Figure 34 – Chemical Supply Delivery Connections



Figure 35 – North Side of WTP Building



Figure 36 – Former Chemical Building locate west of Reservoir 2

HIGH END PUMP STATION

The High End Pump Station is owned and operated by MABS. The facility consists of a 1,500 SF concrete block building that includes the facility's Motor Control Center (MCC), two 2,800 GPM wash pumps (raw water); three distribution pumps: two 100 GPM and one 500 GPM, the Ortho Phosphate dosing system and a 500 KVA diesel generator. The pump station was originally installed in 1993 as part of the Water Treatment Complex. The station flow is monitored by a Sensus Magmeter connected to the system SCADA System.



Figure 1 – Building Looking West from the Water Treatment Plant



Figure 2 – Front Entrance – West Wall



Figure 3 – Electrical Service Panels – North Wall

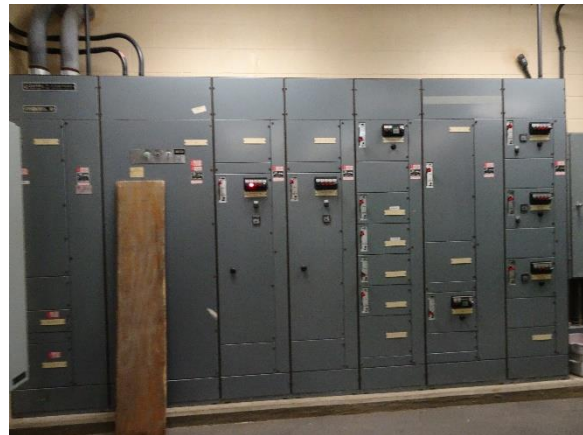


Figure 4 – Motor Control Center (MCC)



Figure 5 – Emergency Generator



Figure 6 – Wash Pumps



Figure 7 – Zinc Orthophosphate storage and dosing system



Figure 8 – High End Service Pumps

850,000 GALLON STORAGE TANK

The 850,000 gallon steel ground storage tank holds treated water for distribution to the system. The tank is constructed of welded steel and is 85 feet in diameter and 21 feet high. The tank was installed in 1993 as part of the original Water Treatment Plant construction. The tank has not been inspected or repainted since the original installation.



Figure 1 – Tank Looking West from WTP



Figure 2 – Entry Hatch



Figure 3 – Tank Information Plate



Figure 4 – South Side of Tank

Shenandoah, PA		Scheduled Visit Date:		2/16/22	
Station Name	Water Treatment Plant, Ground Storage Tank, High Service Pump Station				
Location	Ravens Run Road				
Start Up Date	1993				
CODE					COMMENTS
	WTP MAIN BUILDING				
311.3	Plate Settler Pumps	Feed	Recycle/supernatant	Date Installed	
	Condition	Good	Good		
	No. of Pumps	2	2		
	Type	Vert Centrifugal	Vert Centrifugal		
	Pump Manufacturer				
	Pump Model Number				
	Year Installed	1993	1993		
	Pump Capacity (GPM)	180	180		
	Head (ft)				
	Motor HP	3	3		
320.3	DISINFECTON				
	Chemical Used	Chlorine Gas			
	Strength				
	Size Container				
	Chemical Supplier				
	Chemical Feed Controller	2			Pre and Post chlorination
	Manufacturer	Archer			
	Model No.	ACV-10			
320.3	CHLORINE ANALYZER				
	Manufacturer	Archer			
	Data Logger	SCADA			
	Year Installed				
320.3	CHLORINE CONTACT TANK	Inline mixer			
	TURBIDIMETER				
	Manufacturer	Hach		1993	
	Model	Surface Scatter 6			
	Number	4			
304.3	BUILDING				
	Condition	Very Good			Office Area, Conference room, Administration Office. Office is integral with the treatment Plant.
	Size				The treatment portion consists of a chemical storage and addition room, plate settler room, office, laboratory, lunch room, sand filter room on the second floor and chlorine contact and storage room.
	Main Structure Material	Architectural Concrete Block			
	Roof Type	Flat Roof, membrane			
	Roof Condition	unknown			
	Doors (number /material)	Steel			
	Lighting (Type)	Florescent			
	Year Installed	1993			
320.3	ELECTRICAL				
	MCC		112.5 KVA transformer		
	Alarm System (manf/ model)				
	Year Installed				
	HVAC	Heat	Ventilation		
	Condition	Very Good	Very Good		
	Number	2	Numerous		
	Type	Oil - Hot Water	exhaust units / Air intake louvers		
	Manufacturer	Weil-McLain			
	Year Installed	2021	1993		
	WATER LEVEL CHART RECORDER				
	Manufacturer	SCADA			
	GROUND				
	Fence Length	1,800			
	Fence Type	cyclone w/ barbed wire			
	Year Installed	1993			
	Paving and Walkways	Entrance drive and parking areas are paved			
	Blowers				
	Size	630 SCFM			
	Number	2			
	Manufacturer	Roots/Dresser			
	Model	93E			
	HP	25 +/-			
	Compressor				
	Size	50 CFM @ 90 psig	120 gallon tank		
	Number	1			
	Manufacturer	Ingersoll Rand			
	HP	15			

4.2 DAMS

Pennoni performed a field visit to each of the referenced dams (Raven Run Dams No. 2 and No. 3 and Ringtown Dams No. 5 and No. 6) on 3/2/2022 to review the 2020 and 2021 Annual Dam Inspection Reports and determine if the dam condition is in general agreement with the reports.

Raven Run Dam No. 2 (PADEP ID No. 54-07)

Facility Description

Latitude: 40°49'22" N Longitude: 76°14'28" W

Based on the 2021 Annual Inspection Dam Report the dam was last inspected on 11/15/2021. The Raven Run Dam No. 2 is a Class C-2 earthen embankment dam located in West Mahanoy Township, Schuylkill County, PA. The dam is owned by the Municipal Authority of the Borough of Shenandoah. The earthen dam embankment is 2:1 slope on both the upstream and downstream side of the dam. The embankment is 400' in length, 37' high and has a top width of 8 feet. The dam is over the Lost Creek and has a storage volume of 139 ac-ft. The spillway is located at the right abutment and consists of a broad crested stone block weir and a hand placed stone spillway channel retained by mortared stone sidewalls.

Property Condition

Observations of the embankment, spillway, outlet works and downstream channel remain unchanged from the 2021 inspection. Most of the recommendations from the 2021 Inspection report have been completed. However, the PADEP has requested that a plan and schedule of upgrades for the dam be completed and implemented for the dam. This schedule was not available to this reviewer.



Figure 1 – Raven Run Dam No 2 – Embankment Slope at spillway



Figure 2 – Raven Run Dam No 2 - Spillway



Figure 3 – Raven Run Dam No 2 – Right Embankment – Abutment and Drainage Weir at Toe of Dam



Figure 4 – Raven Run Dam No 2 – Downstream Spillway Channel Culvert

Raven Run Dam No. 3 (PADEP ID No. 54-08)

Facility Description

Latitude: 40°49'27" N Longitude: 76°14'15" W

Based on the 2021 Annual Inspection Dam Report the dam was last inspected on 11/15/2021. The Raven Run Dam No. 3 is a Class C-1 earthen embankment dam located in West Mahanoy Township, Schuylkill County, PA. The dam is owned by the Municipal Authority of the Borough of Shenandoah. The grassed earthen dam embankment is 2:1 slope on both the upstream and downstream side of the dam. The embankment is 1,010' in length, 40' high and has a top width of 10 feet. The dam is over the Lost Creek and has a storage volume of 278 ac-ft. The spillway is located at the right abutment and consists of a stone approach weir and a hand placed stone spillway channel retained by mortared stone sidewalls.

Property Condition

Observations of the embankment, spillway, outlet works and downstream channel remain unchanged from the 2021 inspection. Most of the recommendations from the 2021 Inspection report have been completed. However, the PADEP has requested implementation of a schedule of upgrades for the dam. This schedule was not available to this reviewer.



Figure 1 – Raven Run Dam No 3 – Embankment Crest



Figure 2 – Raven Run Dam No 3 – Spillway



Figure 3 – Raven Run Dam No 3 – Spillway, Slope and Crest



Figure 4 – Raven Run Dam No 3 – Downstream Slope and Crest

Ringtown Dam No. 5 (PADEP ID No. 54-04)

Facility Description

Latitude: 40°50'33" N Longitude: 76°14'50" W

Based on the 2021 Annual Inspection Dam Report the dam was last inspected on 11/15/2021. The Ringtown Dam No. 5 is a Class B-1 earthen embankment dam located in Union Township, Schuylkill County, PA. The dam is owned by the Municipal Authority of the Borough of Shenandoah. The grassed earthen dam embankment is 2:1 slope on both the upstream and downstream side of the dam. The embankment is 535' in length, 60' high and has a top width of 9 feet. The dam is over the Little Catawissa Creek and has a storage volume of 1,055 ac-ft. The spillway is located through the center of the downstream slope and consists of an asphalt approach area, a broad crested concrete weir and a stepped roller compacted concrete/asphalt spillway chute.

Property Condition

Observations of the embankment, spillway, outlet works and downstream channel remain unchanged from the 2021 inspection. Most of the recommendations from the 2021 Inspection report have been completed. However, the PADEP has requested implementation of a schedule of upgrades for the dam. This schedule was not available to this reviewer.



Figure 1 – Ringtown Dam No 5 –Downstream slope of Embankment



Figure 2 – Ringtown Dam No 5 –Upstream slope of Embankment



Figure 3 – Ringtown Dam No 5 – Crest of Roller Compacted Concrete Spillway



Figure 4 – Ringtown Dam No 5 –Roller Compacted Concrete Spillway

Ringtown Dam No. 6 (PADEP ID No. 54-95)

Facility Description

Latitude: 40°49'52" N Longitude: 76°16'54" W

Based on the 2021 Annual Inspection Dam Report the dam was last inspected on 11/15/2021. The Ringtown Dam No. 6 is a Class B-1 Earthen embankment dam located in Union Township, Schuylkill County, PA. The dam is owned by the Municipal Authority of the Borough of Shenandoah. The grass covered earthen dam embankment is 2:1 slope on both the upstream and downstream side of the dam. The embankment is 725' in length, 50' high and has a top width of 9 feet. The dam is over an unnamed tributary to the Little Catawissa Creek and has a storage volume of 1,075 ac-ft. The spillway is located at the right abutment and consists of a stone approach area, a broad crested concrete weir and a concrete spillway chute.

Property Condition

Observations of the embankment, spillway, outlet works and downstream channel remain unchanged from the 2021 inspection with the exception of a new erosion area with seepage at the left embankment/abutment (See photos). The seep should be investigated further.

Most of the recommendations from the 2021 Inspection report have been completed. However, the PADEP has requested implementation of a schedule of upgrades for the dam. This schedule was not available to this reviewer. In addition, PADEP requests the design of a weir box in their annual review letters. This must be completed.



Figure 1 – Ringtown Dam No 6 – Concrete Spillway



Figure 2 – Ringtown Dam No 6 – Concrete Spillway Channel at Toe

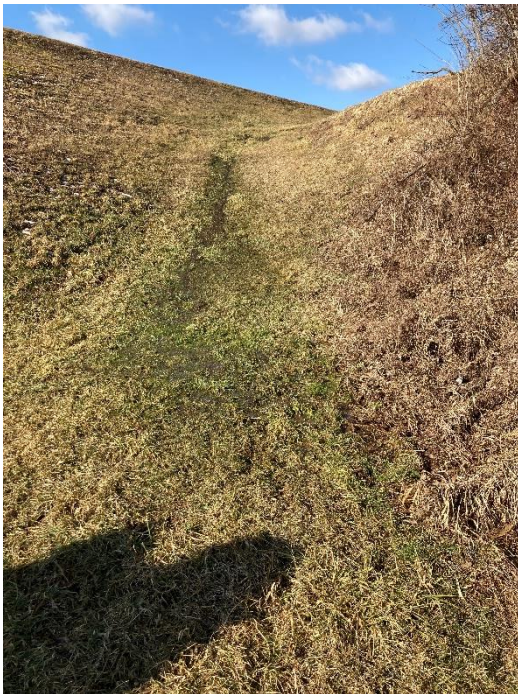


Figure 3 – Ringtown Dam No 6 – Downstream Embankment Right Side- With Seep



Figure 4 – Ringtown Dam No 6 – Embankment Crest and Crest Line

4.3 BOOSTER PUMP STATIONS

Turkey Run PS (aka Shenandoah South)

Facility Description (see attached Information Sheet)

The Turkey Run PS is owned and operated by MABS and is located at Main Street (Rt. 924) and Herald Road. The pump station is equipped with two 30 HP centrifugal pumps rated at 323 GPM at 222 feet of head, manufactured by DP Industries. The pump station was originally installed in 1974. The pumps and motors were upgraded in 2020.

The Pump Station is a 20' x 10' approximately 8' deep concrete vault. Access is via 3' x 3' aluminum hatch, with a concrete removable panel over the pumps. There are five 4" gate valves. The station has a magnetic flow meter connected to the SCADA System. Electrical to the station is supplied by a 300 Amp breaker box and a 100 Amp electrical panel.

Property Condition

The vault and all mechanical and electrical equipment are in good condition.



Figure 1 – Pump Station looking West



Figure 2 – Vault Entrance Hatch



Figure 3 – Pump 1



Figure 4 – Pump 2



Figure 5 – Pump Control Panel

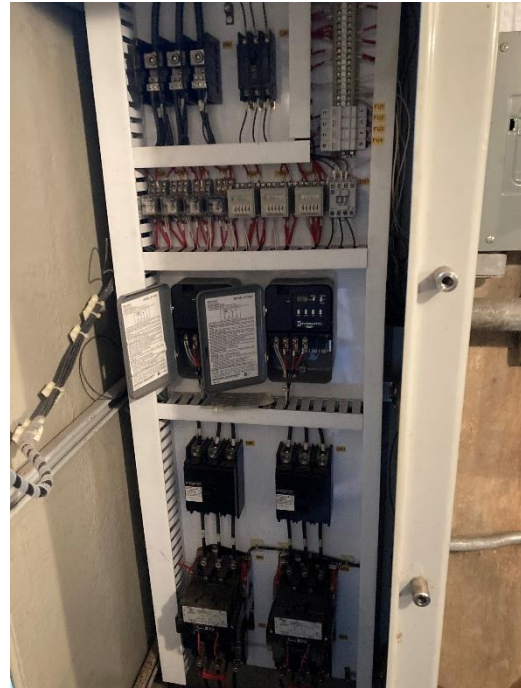


Figure 6 – Control Panel Interior



Figure 7 – Power Disconnect



Figure 8 – Discharge Piping

Shenandoah, PA		Pump / Booster Station		Scheduled Visit Date:	2/23/2022
Station Name	Turkey Run aka Shenandoah South	Phone #			
Location	Turkey Run Road				
Start Up Date	1974				
CODE					COMMENTS
311.3	Booster Pumps			Year Installed	
	Condition	very good		2020	Upgraded in 2020
	No. of Pumps	2			
	Type	Centrifugal			
	Pump Manufacturer	DP Industries			
	Pump Model Number	DPNS 065			
	Year Installed	4/8/2020			
	Pump Capacity (GPM)	323			
	Head (ft)	222			
	Motor HP	30			
	Finished Water Meter Type	Magmeter?			
	Size				
	Meter Manufacturer				
	Control Panel	Generic			
320.3	VALVES				
	Type	Pressure regulating	Ball		
	Manufacturer				
	Size				
	#				
	Year Installed				
304.3	BUILDING				
	Condition	Fair			
	Size	20' x 10'			
	Main Structure Material	Concrete Vault			
	Roof Type				
	Roof Condition				
	Doors (number /material)	30" x 30" Alum hatch			
	Lighting (Type)	Bulbs			
	Year Installed				
320.3	ELECTRICAL				
	MCC	300 AMP Panel	100 AMP sub-panel		
	Alarm System (manf/ model)				
	Year Installed				
	HVAC				
	Condition	Fair			
	Type	exhaust fan			
	Manufacturer				
	Year Installed				
	WATER LEVEL CHART RECORDER	SCADA			
	Manufacturer				
	GROUNDS				
	Fence Length	N/A			
	Fence Type				
	Year Installed				
	Paving and Walkways	stone			
320.3	GENERATOR	N/A			
	Condition				
	Manufacturer				
	Generator KW				
	Generator KVA				
	Fuel Tank (Gals)				
	ATS (manf/model #)				
	Year Installed				

Pump Station No. 7

Facility Description (see attached Information Sheet)

Pump Station No. 7 is owned and operate by MABS and is located on a stone drive, north west of Shenandoah, approximately 500 feet north of Coal Street. The pump station is equipped with two 75 HP centrifugal pumps rated at 350 GPM. The station is also equipped with a 20 HP Vertical Centrifugal pump manufactured by Gould Inc. installed in 2009. There are no records when the pump station was originally constructed. The flow is measured by a Flowmotion BE6300 ultrasonic flowmeter and a Commander 1900 Chart Recorder and totalizer installed in 2009.

The Pump Station building is an approximately 20' x 20' x 10' high masonry building with a stucco exterior. The roof is composed of concrete panels. There are five 4" gate valves. Electrical to the station is supplied by a 5 KVA Transformer and a single electrical panel.

Property Condition

The building and all mechanical and electrical equipment are in fair condition.



Figure 1 – Front of Building



Figure 2 – Side of Building



Figure 3 – Main Centrifugal Pumps



Figure 4 –Vertical Back-up Pumps



Figure 5 – Pump Control Panel



Figure 6 – Electrical Panels



Figure 7 – Flow Reader



Figure 8 – Chart Recorder

Shenandoah, PA					
	Pump / Booster Station		Scheduled Visit Date:	2/23/2022	
Station Name	No. 7 pump station	Phone #			
	Near West Penn Street				
Start Up Date	unknown				
CODE					COMMENTS
311.3	Booster Pumps	Pump 1&2	Pump 3		
	Condition	fair	good		
	No. of Pumps	2	1		
	Type	Centrifugal	vertical centrifugal		
	Pump Manufacturer		Gould		
	Pump Model Number		33SVBD2K2A		
	Year Installed	unknown	2009		
	Pump Capacity (GPM)	350	135		
	Head (ft)				
	Motor HP	75	20		
	Finished Water Meter Type	Ultrasonic			
	Size				
	Meter Manufacturer	Flowmotion BE6300	Commander 1900 Chart Recorder		
	Control Panel	Generic			
320.3	VALVES				
	Type	Pressure regulating	Ball		Pressure regulation valve is located downstream of pump station
	Manufacturer				
	Size				
	#				
	Year Installed				
304.3	BUILDING				
	Condition	fair			
	Size	approx. 20' x 20'			
	Main Structure Material	concrete			
	Roof Type	concrete panels			
	Roof Condition	poor			
	Doors (number /material)	1 - steel			
	Lighting (Type)	bulbs			
	Year Installed				
320.3	ELECTRICAL				
	MCC		5 KVA transformer		
	Alarm System (manf/ model)				
	Year Installed				
	HVAC				
	Condition	poor			
	Type	Unit Heater			
	Manufacturer				
	Year Installed				
	GROUNDS				
	Fence Length	N/A			
	Fence Type				
	Year Installed				
	Paving and Walkways				
320.3	GENERATOR	N/A			
	Condition				
	Manufacturer				
	Generator KW				
	Generator KVA				
	Fuel Tank (Gals)				
	ATS (manf/model #)				
	Year Installed				

Ringtown Reservoir PS No. 5

Facility Description (see attached Information Sheet)

Pump Station No. 5 is owned and operated by MABS and is located adjacent to the base of the spillway at the Ringtown Reservoir #5 dam. The pump station is equipped with a 400 HP dual Delaval centrifugal pumps (one intake and one discharge) rated at 2 million gallons per day (MGD) and a 600 HP American Marsh centrifugal pump rated at 4 MGD. The motors starters for each pump are two GE Limitamp Control Units. The pump station was originally constructed in 1913 and upgraded in 1977. The American Marsh pump was replaced in 2016. The flow is measured by a Commander 1900 Chart Recorder and totalizer.

The Pump Station building is an approximately 55' x 30' concrete block building with a fieldstone exterior. There is an integral 2-story stone building originally used as a meter room and for storage that is no longer in use. The roof is asphalt shingles, entry is via an 8 foot wide double steel door. Electrical to the station is supplied by a 250 KVA feed and a 4000 volt transformer inside the building. A 225 amp electrical panel supplies power to various components inside the building. The building is heated by an oil-fired forced air furnace. A 250-gallon heating oil tank is located inside along the north wall.

Property Condition

The building and all mechanical and electrical equipment are in good condition.



Figure 1 – Pump Building



Figure 2 – Motor Starters



Figure 3 – Building Electrical Feed

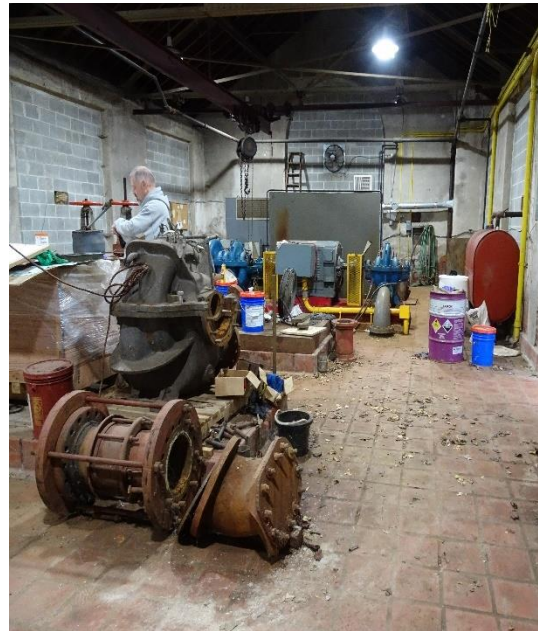


Figure 4 –Interior of Building



Figure 5 – 2 MGD Pump



Figure 6 – 2 MGD Pump

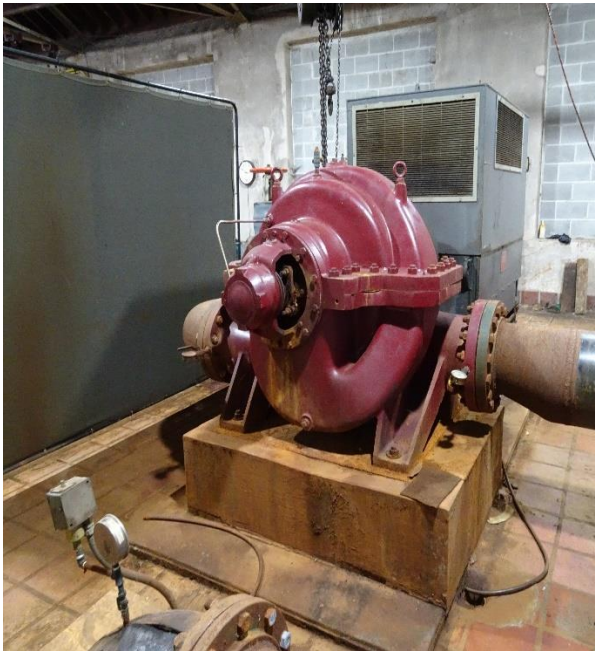


Figure 7 – 4 MGD Pump



Figure 8 – Discharge Piping

Shenandoah, PA		Pump / Booster Station	Phone #	Scheduled Visit Date:	2/24/2022
Station Name	Ringtown #5				
Location	Ringtown Reservoir #5				
Start Up Date	1914				
CODE					COMMENTS
311.3	Booster Pumps	Pump 1	Pump 2	Year Installed	
	Condition	fair	good		
	No. of Pumps	2	1		Pump 1 has an intake and discharge pump combo
	Type	Centrifugal	Centrifugal		
	Pump Manufacturer	Delaval	American Marsh		
	Pump Model Number				
	Year Installed	1977	2016		
	Pump Capacity (GPM)	2 MGD	4 MGD		
	Head (ft)				
	Motor HP	400	600		
	Finished Water Meter Type				
	Size				
	Meter Manufacturer				
	Control Panel	GE 400 HP Motor Starter	GE 600 HP Motor Starter	1963	
320.3	VALVES				
	Type	Gate			
	Manufacturer				
	Size	12"			
	#	3			
	Year Installed	1977			
304.3	BUILDING				
	Condition	fair			
	Size	55' x 30'			There is a 20' x 30' extension that is abandoned
	Main Structure Material	field stone and concrete block			
	Roof Type	Asphalt Shingle			
	Roof Condition	good			
	Doors (number /material)	double steel - 8'			
	Lighting (Type)	LED			
	Year Installed				
320.3	ELECTRICAL				
	MCC	250KVA			15 KVA transformer & 225 amp panel
	Alarm System (manf/ model)				
	Year Installed				
	Motor Starters	GE - 400 HP and 600 HP		1963	
	HVAC				
	Condition	good			
	Type	Oil fired furnace			250 gallon oil storage tank
	Manufacturer	Concord			
	Year Installed				
	WATER LEVEL CHART RECORDER				
	Manufacturer	SCADA			
	GROUNDS				
	Fence Length	N/A			
	Fence Type				
	Year Installed				
	Paving and Walkways				
320.3	GENERATOR	N/A			
	Condition				
	Manufacturer				
	Generator KW				
	Generator KVA				
	Fuel Tank (Gals)				
	ATS (manf/model #)				
	Year Installed				

4.4 STORAGE TANKS

Kehly Run Tank

The Kehly Run Tank is owned and operated by MABS. The 63-foot diameter x 44' high, 1-million gallon ground storage tank was constructed in 1991. It is constructed of welded steel and is located along Ringtown Boulevard on the east side of Shenandoah Heights. The storage tank was inspected and repainted in 2010. The rehabilitation improvements consisted of interior and exterior paint. The elevated tank is monitored by the SCADA system via a remote terminal unit (RTU) installed in 2016. The tank is fed by gravity from another location. The tank was installed to support fire protection in the area. The tank is surrounded by an approximately 350-foot, 8 foot high cyclone fence topped with barbed wire. A concrete valve pit is located north of the tank.

Property Condition

The Tank and property are in good condition.



Figure 1 – Tank Looking East



Figure 2 – Valve Vault



Figure 3 – Entrance to Valve Vault



Figure 4 – Tank Plate

Shenandoah, PA		Water Tank		Scheduled Visit Date:	2/24/2022	
Station Name		Kehly Run Tank	Phone #			
Location		Ringtown Blvd - Shenandoah Heights (East Side)				
Start Up Date	1991	Last inspection date:	Approx. 2010			
CODE						
330.4	WATER TOWER			Date Installed	COMMENTS	
		Size (gallons)	1 Million			
		Style of Tank	Ground Storage Tank			
		Dimensions	63' diameter x 44' high			
		Material	Welded Steel			
		Control Panel				
		Transducer				
		Electrical Panel				
		Altitude Valve				
		Mixer				
		Paint Condition	Fair			
		Fence Length				
		Fence Type	8' cyclone w/ barbed wire			
		Year Installed	1991			Advance Tank Company
		Paving and Walkways				
		Pressure Reducing Valve				
		Meter				
		Last inspection (date)	Approx. 2010			
		Last interior coating (date)	Approx. 2010			
		Last exterior coating (date)	Approx. 2010			
		Other	Concrete valve pit			Tank is fed by gravity from another location. Tank was installed for fire protection.

Turkey Run Tank

Facility Description (see attached Information Sheet)

The Turkey Run Tank is owned and operated by MABS. The elevated storage tank has a top height of 159 feet. The actual storage tank is approximately 30 feet in diameter x 29' high and holds 150,000-gallons of water. The tank was installed in 1974 by Caldwell Tanks, Inc. It is constructed of welded steel and is located on Furnace Steet approximately one mile south of Shenandoah. The storage tank was inspected and repainted in 2012. The elevated tank is monitored by the SCADA system via a remote terminal unit (RTU) installed in a concrete vault at the base of the tank. The vault also contains valves and gauges. The tank is surrounded by an approximately 300-foot, 8-foot high cyclone fence topped with barbed wire. The tank has several communication towers (not owned by MABS) located on its perimeter. Adjacent to the tank are electrical controls and an emergency generator for the cell tower equipment.

Property Condition

The tank and property are in good condition.



Figure 1 – Tank from Furnace Street



Figure 2 – Tank Plate



Figure 3 – Valve Vault



Figure 4 – Telemetry Box



Figure 5 – Ventilation System



Figure 6 – Valve and Piping



Figure 7 – Electrical Panel



Figure 8 – Generator and Electrical Equipment for Cell Towers

Shenandoah, PA		Water Tank		Scheduled Visit Date:	2/23/2022
Station Name		Turkey Run	Phone #		
Location		Furnance Street			
Start Up Date	1974	Last inspection date:			
CODE					
330.4	WATER TOWER			Date Installed	COMMENTS
		Size (gallons)	150,000		
		Style of Tank	Elevated		
		Dimensions	159 ft high (water tank approx. 30 dia. X 29' high)		
		Material	Steel		
		Control Panel	Tri-Star		cell phone sends data back to scada system
		Transducer			
		Electrical Panel	100 Amp		
		Altitude Valve			
		Mixer			
		Paint Condition	Good		
		Fence Length	approx 300 feet		
		Fence Type	Chainlink		
		Year Installed			
		Paving and Walkways	Gravel / Dirt		
		Pressure Reducing Valve			
		Meter			
		Last inspection (date)	Approximately 2012		
		Last interior coating (date)	Approximately 2012		
		Last exterior coating (date)	Approximately 2012		
		Valve Pit	6' x 6' concrete with steel hatchway		
		Generator and Electrical Equipment			Adjacent generator and electrical equipment supports the cell tower equipment on the tank.

Swatara Road Standpipe

Facility Description (see attached Information Sheet)

The Swatara Road Standpipe is owned and operated by MABS. The standpipe is 65 foot high, 38 foot diameter, 500,000 gallon storage tank was constructed in 1978. It is constructed of welded steel and is located along Swatara Road on the east side of Shenandoah Heights. The storage tank was inspected and repainted in 2012. The tank is monitored by the SCADA system via a remote terminal unit (RTU). The tank is surrounded by an approximately 250 foot, 10 foot high cyclone fence topped with barbed wire. A concrete valve pit is located at the base of the tank and contains pressure gauges and valves.

Property Condition

The tank and property are in good condition.



Figure 1 – Tank looking South



Figure 2 – Valve Vault



Figure 3 – Entrance to Valve Vault

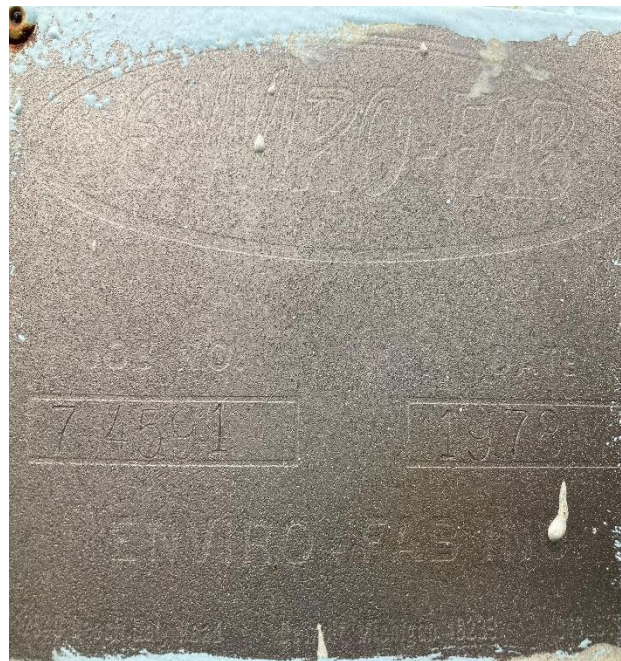


Figure 4 – Tank Plate

Shenandoah, PA		Water Tank		Scheduled Visit Date:	2/23/2022
Station Name		Swatara Road	Phone #		
Location		Shenandoah Heights - west side			
Start Up Date	1978	Last inspection date:			
CODE					
330.4	WATER TOWER			Date Installed	COMMENTS
		Size (gallons)	500,000	1978	
		Style of Tank	Standpipe		
		Dimensions	38' Diameter x 65' high		
		Material	Welded Steel		
		Control Panel			cell phone sends data back to scada system
		Transducer			
		Electrical Panel			
		Altitude Valve			
		Mixer			
		Paint Condition	good		
		Fence Length			
		Fence Type	Chainlink - 10 ft high		
		Year Installed	1978		
		Paving and Walkways	stone		
		Pressure Reducing Valve			
		Meter			
		Last inspection (date)	approx 12 - 15 years ago		
		Last interior coating (date)	approx 2012		
		Last exterior coating (date)	approx. 2012		
		Valve Pit	Concrete		

4.5 PRESSURE REDUCING VALVE (PRV) VAULTS

There are two PRV Vaults located in the system. Vault 1 is located on the roadway leading to Booster Station #7, approximately 100 feet south. Vault 2 is located on the west side of Raven Run Road, approximately 200 feet north of Tar Road.

Vault 1 is approximately 15' x 7' x 8' deep. The vault constructed in 1994 of precast concrete, access is via a 2.5' x 3' cast iron hatch. The Vault contains a 10-inch Pressure Reducing Valve, a 10-inch Flow Meter and three 10-inch gate valves (1 in the chamber and 2 outside). It appears that all of the equipment is original.

Vault 2 is 15' x 7' x 8' deep. The vault is constructed of poured concrete, access is via a 3' x 3' aluminum hatch. The Vault contains a 6-inch and a 2-inch Cla-Val Pressure Reducing Valve and a Sensus Flow Meter and various 6" and 2" gate valves. It appears that the 6-inch gate valves and flow meter were recently replaced.

Both PRV vaults and equipment are owned and operated by MABS.



Figure 1 – Vault 1 Entrance

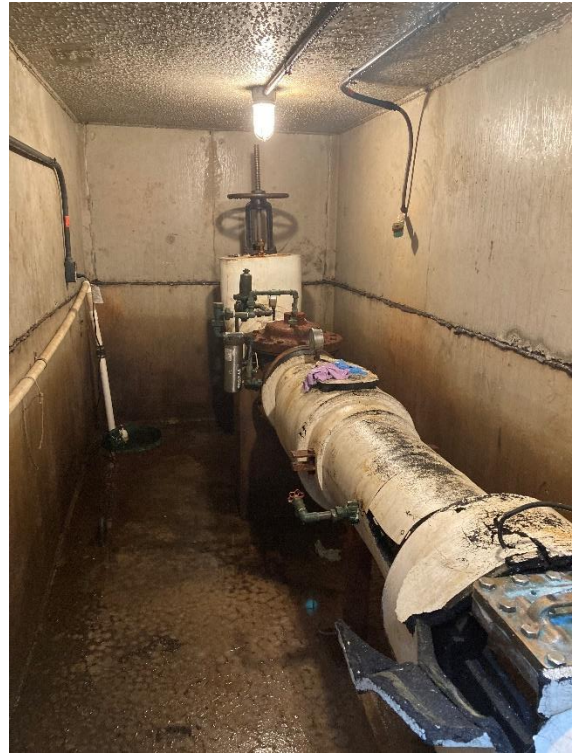


Figure 2 – Vault 1 Piping



Figure 3 – Vault 1 Pressure Sensor



Figure 4 – Vault 1 Piping



Figure 1 – Vault 2 looking West



Figure 2 – Vault 2 looking East



Figure 3 – Vault 2 Interior



Figure 4 – Vault 2 Pressure Regulator Spur



Figure 5 – Vault 2 Pressure Regulator



Figure 6 – Vault 2 Flow Meter



Figure 7 – Vault 2 Flow Meter



Figure 8 – Vault 2 Piping

No. 7 Pump House Pressure Reducing Valve Pit		
Information		Comments
Vault Size	Appox. 4' x 15' x 8' H	
Material	underground Pre-fab concrete vault	
Valve Manufacturer		
Pipe Size	10 inch	
Transducer	sends signal to SCADA	
Sump Pump	yes	
Gate Valve	10 inch	
Year Built	1994	
Raven Run Road Pressure Reducing Valve Pit		
Information		
Vault Size	7' x 15' x 8' deep	
Material	Poured Concrete	
Valve Manufacturer	CLA-VAL	
Pipe Size	6"	
Valve Manufacturer	CLA-VAL	
Pipe Size	2"	Branch off of the main
Sump Pump	no	
Gate Valve	2 rising stem	
Flow meter	Sensus C2	
Year Built	2009	

4.6 DISTRIBUTION SYSTEM

The Municipal Authority of the Borough of Shenandoah owns and operates approximately 48 miles of distribution pipes. A map of the service areas can be found in Appendix A. Distribution system related cost data can be found in Section 7 for the water mains, valves, hydrants and services under account codes 331.4, 333.4 and 335.4.

4.7 OTHER FACILITIES

Caretaker House

The Caretaker house is located east of the Ringtown Dam #5. The building is a 2-story stone building, approximately 1540 SF with a basement, constructed in 1913. The house was recently partially renovated with new windows. The building is not in use. The building is owned by MABS.

The roof and interior are in poor condition. The property has an abandoned garage that is partially collapsed. A well is located in the back of the house.

Warehouse and Maintenance Buildings

The maintenance building and warehouse are owned by MABS and are located at 104 N. Ferguson Street in the Borough of Shenandoah. The two buildings are connected by a common doorway.

The maintenance building is a concrete block building constructed in 1950 which contains the garage, office, and bathroom. The adjacent warehouse was constructed in 1938 and is used for parts and equipment storage.

Both buildings are heated by an oil fired hot air furnace located in the maintenance building. Each building has an automated garage door.

Both buildings are in good condition.



Figure 2 – Caretaker House Front



Figure 5 – Caretaker House Rear



Figure 7 – Caretaker House Garage



Figure 4 – Caretaker House Well



Figure 5 –Maintenance and Warehouse Buildings



Figure 6 –Maintenance Garage



Figure 7 –Office

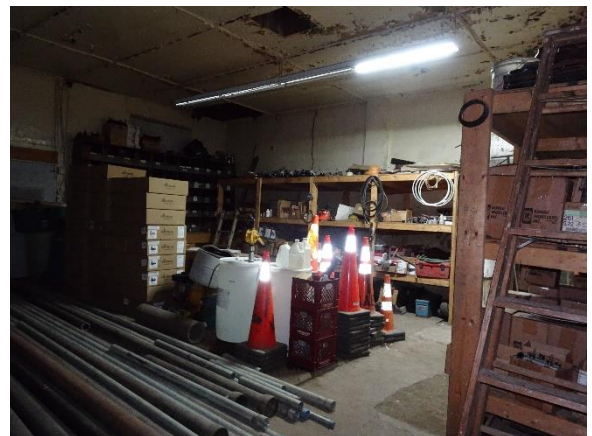


Figure 8 – Warehouse

CARETAKER HOUSE

Location	Ringtown Reservoir No. 5				
Year Built					
CODE					COMMENTS
	BUILDING				
	Type	2 story with basement			
	Condition	Poor			Currently abandoned and boarded up
	Size	Approx. 40 x 40			
	Main Structure Material	field stone and stucco			
	Roof Type	Asphalt Shingle			
	Roof Condition	fair			
	Doors (number /material)	front and rear vertical sliding			
	Lighting (Type)				
	OTHER				
	Water supply well in back yard				
	Anandoned concrete block garage				
	Year Built	1913			Crumbling

MAINTENANCE / WAREHOUSE BUILDINGS				
Location	104 N. Ferguson Street			
Year Built				
CODE				COMMENTS
BUILDING	Building 1	Building 2		
Type	1 1/2 story	2 story		
Condition	Good	Good		
Size	Approx. 60 x 25	Approx. 60 x 25		
Main Structure Material	Concrete Block	Concrete Block with brick façade		
Roof Type	Flat Roof, membrane	Flat Roof, membrane		
Roof Condition				
Doors (number /material)	12 ft. overhead steel	10 ft. overhead wood	both doors electically operated	
Lighting (Type)	Florescent	Florescent		
OTHER				
Use	Garage	Warehouse		
Anandoned concrete block garage				
Year Built	1950	1938		

5. OWNED PROPERTY & EASEMENTS OF VALUE

Property that was directly purchased by the MABS and easements acquired are listed in Section 7 – “List of Assets and Costs”. The value of said easements are listed with a purchase price of \$1 or actual cost if documented and are included in the original purchase price of the facilities listed in Section 7 – “List of Assets and Costs”, Accounts 303.2, 303.3 and 303.4. Easements for approximately 78 parcels may be required.

6. REGULATORY REQUIREMENTS



NORTHEAST REGIONAL OFFICE

DEC 01 2017

November 21, 2017

Ms. Donna Gawrylik, Chair-Person
 Municipal Authority of the Borough of Shenandoah
 P.O. Box 110
 Shenandoah, PA 17976-0110

Re: DEP File No. WA 54-44C
 Municipal Authority of the Borough of Shenandoah
 Shenandoah Borough, Schuylkill County
 APS No. 605495

Dear Ms. Gawrylik:

The water allocation application filed by the Municipal Authority of the Borough of Shenandoah has been approved. Water Allocation Permit WA 54-44C grants the Municipal Authority of the Borough of Shenandoah the right to withdraw from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Average Annual, Ringtown No. 5 (Dreshers Run) 2.0 MGD Average Annual, and Raven Run No. 2 2.05 MGD Average Annual, for a total withdrawal not to exceed 2.05 MGD Average Annual as measured below Raven Run No. 2 at the influent raw water meter to the Shenandoah Water Treatment Plant. Conservation releases of 460,000 gpd for Ringtown No. 6, 210,000 gpd for Ringtown No. 5, and 250,000 gpd for Raven Run No. 2 are required. The permit is enclosed.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in Braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions regarding the permit conditions, you may contact Deborah S. Wilkes, Technical Services Section, at the letterhead address or 570.830.3102.

Sincerely,

A handwritten signature in black ink, appearing to read "B. T. Yagiello". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Brian T. Yagiello
Environmental Program Manager
Safe Drinking Water Program

Enclosures

cc: Mr. Chris McCoach/Alfred Benesch & Company



November 21, 2017

Municipal Authority of the Borough of Shenandoah
Shenandoah Borough, Schuylkill County

Permit No. WA54-44C

WATER ALLOCATION PERMIT

The Pennsylvania Department of Environmental Protection (the Department), renamed by the Act of June 28, 1995, No. 18, P.L. 89, 71 P.S. §1340.101 *et. seq.*, known as the Conservation and Natural Resources Act, and continuing to exercise the powers and duties established by the Act of December 3, 1970, No. 275, P.L. 834, 71 P.S. §510-1 *et. seq.*, as amended, known as The Administrative Code, as successor to the Water and Power Resources Board, under and by virtue of the authority vested in and imposed upon it by the Act of June 24, 1939, No. 365, P.L. 842, 32 P.S. §631 *et seq.*, known as the Water Rights Act, hereby grants leave to the **Municipal Authority of the Borough of Shenandoah**, with its principal offices located in **P.O. Box 110, Shenandoah, PA 17976-0110, Schuylkill County, Pennsylvania**, to acquire and use for public water supply purposes, subject to such existing rights and uses as may now be lawful, water rights in the following designated waters of the Commonwealth:

The right to withdraw from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Average Annual, Ringtown No. 5 (Dreshers Run) 2.0 MGD Average Annual, and Raven Run No. 2 2.05 MGD Average Annual, for a total withdrawal not to exceed 2.05 MGD Average Annual as measured below Raven Run No. 2 at the influent raw water meter to the Shenandoah Water Treatment Plant. Conservation releases of 460,000 gpd for Ringtown No. 6, 210,000 gpd for Ringtown No. 5, and 250,000 gpd for Raven Run No. 2 are required.

This permit does not give any property rights, either in real estate or material, nor any exclusive privileges, nor shall it be construed to grant or confer any right, title, easement or interest in, to or over any land belonging to the Commonwealth of Pennsylvania; neither does it authorize any injury to private property nor invasion of private rights, nor any infringement of Federal, State or Local laws or regulations; nor does it obviate the necessity of obtaining Federal assent when necessary.

This permit is issued in response to an application filed with the Department on the 29th day of January, 2007, and with the understanding that the proposed sources of water supply shall be developed as set forth in said application and in accompanying and supplemental data filed with and made a part thereof, subject, however to the provisions of the Water Rights Act, and the following conditions, regulations and restrictions.

Condition 1:

Duration of Permit: The duration of this permit shall be for a period of 25 years and shall expire on November 21, 2042. However, should the permittee for any reason whatsoever (1) fail to construct within a period of four years the works necessary for

the development of the supply of water allocated under this permit, or (2) fail to take and use within a period of four years the water or water rights for which this permit is issued, or (3) cease for any period of seven consecutive years to take and use the water hereby allocated, then this permit shall cease and be null and void; unless upon application by the permittee an extension of such period is granted by the Department of Environmental Protection's Northeast Regional Office;

Condition 2:

Measuring Device and Reporting Requirement: The permittee shall install accurate measuring and recording instruments or devices on the raw water transmission main between Ringtown No. 6 and Ringtown No. 5 reservoirs to determine the amount of water transferred. The design and layout of said measuring devices shall be submitted to and be approved by the Department of Environmental Protection's Northeast Regional Office before installation. Records of daily flow readings shall be submitted on a monthly basis to the Department's Permits Division in the Bureau of Safe Drinking Water (preferably electronically), and the original field records shall be available at all times for inspection by representatives of the Department. The required measuring devices shall be installed and readings shall begin within 1 year from the date of this permit, for all existing sources. This deadline may be extended at the Department's discretion if the permittee makes a written request to the Department of Environmental Protection's Northeast Regional Office;

Condition 3:

Conservation Release, Measuring Device and Reporting Requirement: A continuous flow of not less than 0.39 cubic feet per second per square mile from the 1.81 square miles of watershed area above the Ringtown No. 6 reservoir shall be maintained at all times immediately below Ringtown No. 6. This flow is equivalent to 460,000 gallons per day or 0.71 cubic feet per second. A continuous flow of not less than 0.38 cubic feet per second per square mile from the 0.83 square miles of watershed area above the Ringtown No. 5 reservoir shall be maintained at all times immediately below Ringtown No. 5. This flow is equivalent to 210,000 gallons per day or 0.32 cubic feet per second. A continuous flow of not less than 0.41 cubic feet per second per square mile from the 0.93 square miles of watershed area above the Raven Run No. 2 reservoir shall be maintained at all times immediately below Raven Run No. 2. This flow is equivalent to 250,000 gallons per day or 0.38 cubic feet per second. The permittee shall install accurate measuring and recording instruments or devices to determine the amount of flow in the stream channel. The design and layout of said measuring devices shall be submitted to and be approved by the Department of Environmental Protection's Northeast Regional Office before installation. Records of daily flow readings shall be submitted on a monthly basis to the Department's Permits Division in the Bureau of Safe Drinking Water (preferably electronically), and the original field records shall be available at all times for inspection by representatives of

the Department. The required measuring devices shall be installed and readings shall begin within 1 year from the date of this permit. This deadline may be extended at the Department's discretion if the permittee makes a written request to the Department of Environmental Protection's Northeast Regional Office. The passby flow/conservation release specified herein may be temporarily modified by the Department's Commonwealth Drought Coordinator or the Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning in writing during an emergency, upon written request from the permittee and satisfactory demonstration that the permittee has taken all reasonable conservation measures to avert and mitigate the emergency condition;

Condition 4:

Operations and Drought Contingency Plan: The permittee shall develop a contingency plan outlining the measures that will be taken to conserve the available supply and reduce water use during an emergency (e.g., drought, industrial waste spill, etc.). The plan shall include staged voluntary and mandatory water use restrictions and a description of parameters to trigger these actions at various stages, and the identification of available emergency sources or interconnections and when these sources would be utilized. The plan shall also indicate how water use restrictions will be enforced. The contingency plan shall be adopted by the permittee and submitted to the Department of Environmental Protection's Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning within one year of the date of this permit and updated and submitted to the Department every three years thereafter or within six months of the addition or abandonment of any source of supply;

Condition 5:

Drought Contingency Plan: The permittee shall respond to drought conditions as outlined within the Municipal Authority of the Borough of Shenandoah Drought Contingency Plan. The permittee shall impose water use restrictions upon customers in accordance with and at such time as actions which are required of customers served by the Municipal Authority of the Borough of Shenandoah;

Condition 6:

Water Conservation: The permittee shall adopt and implement a continuous water conservation program for all types of use within the area served by this permit. This program shall include, but is not limited to:

- The installation of water meters on all unmetered customer connections;
- An ongoing program for installing meters at all new customer connections;

- An ongoing program for regularly testing and repairing or replacing all meters;
- An ongoing leakage/loss control program;
- A water conservation education program;
- A program for reducing customer demand for water by requiring the installation of water-saving plumbing devices in all new accounts or promoting the adoption of water conservation ordinances;

The permittee's water conservation program shall comply with the water conservation policies of the Susquehanna River Basin Commission and the recommendations of the Department's Northeast Regional Office contained in the report on this allocation.

Condition 7:

Permit Compliance Reporting: The permittee shall submit a permit compliance report to the Department of Environmental Protection's Permits Division in the Bureau of Safe Drinking Water, on forms provided by the Department, annually, on or before the anniversary date of this permit, unless otherwise specified;

Condition 8:

Chapter 110 Requirements: The permittee shall register each source/interconnection approved under this permit and submit reports in accordance with 25 Pa. Code Chapter 110 Regulations. Registration and reporting shall be to the Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning;

Condition 9:

Prohibition on Supplying Water to Other Public Water Suppliers: The permittee shall not supply any new or additional quantity of water to any public water supply agency until that agency shall have first obtained from the Department of Environmental Protection's Northeast Regional Office a subsidiary water allocation permit for the specific purchase quantity;

Condition 10:

Reduction of Water Losses: Within one year of the date of this permit, the permittee shall initiate a study to develop a plan to reduce its unaccounted-for water loss and shall reduce such loss to a level of 20 percent or less within five years of the date of this permit. Such study shall be completed and the final results and recommendations

reported to the Department of Environmental Protection's Northeast Regional Office, with a copy to the Permits Division in the Bureau of Safe Drinking Water within two years of the date of this permit. The deadlines set forth in this condition may be extended with written approval by the Northeast Regional Office, upon good cause shown, providing that the permittee demonstrates satisfactory and good faith progress toward compliance with this condition;

Condition 11:

Revocation of Permit: Water Allocation Permit WA54-44A, issued to the Municipal Authority of the Borough of Shenandoah on **November 14, 1950** and granting 3,500,000 gallons per day from Little Catawissa Creek, Whiskey Mill Run, Dresher's Run, Raven Run No. 2, Kehly Run and W.P.A. reservoir is hereby revoked and shall be returned to the Department of Environmental Protection's Northeast Regional Office;

Condition 12:

Revocation of Permit: Water Allocation Permit WA54-44B, issued to the Municipal Authority of the Borough of Shenandoah on **November 10, 1964** and granting the right to withdraw 600,000 gallons per day from Fetter Pond is hereby revoked and shall be returned to the Department of Environmental Protection's Northeast Regional Office;

Condition 13:

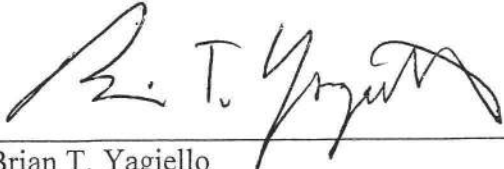
Renewal Requirement: Within 18 months, but no less than one year, prior to the expiration date specified in Condition No. 1, the permittee shall submit to the Department of Environmental Protection's Northeast Regional Office a complete and acceptable application for a new permit, if permittee desires to continue to acquire the water rights granted by this permit beyond the expiration date. Upon the Department's acceptance of such application for review, the expiration date of this permit shall be extended during the review period until issuance or denial of said new permit;

Condition 14:

Permit Modification: This permit is subject to review and possible modification of said rights, conditions, or restrictions at a later date or dates, as provided in Section 7 of the Act of June 24, 1939, P.L. 842 (No. 365).

DATE: November 21, 2017

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Brian T. Yagiello
Environmental Program Manager
Safe Drinking Water Program

ATTEST:



Brian F. Busher, P.E.
Environmental Engineer Manager
Safe Drinking Water Program

WA 54-44C



REPORT ON THE APPLICATION

FOR A WATER ALLOCATION BY

Municipal Authority of the Borough of Shenandoah

SCHUYKILL COUNTY

November 21, 2017

SAFE DRINKING WATER PROGRAM

NORTHEAST REGIONAL OFFICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

REPORT ON THE APPLICATION
FOR A WATER ALLOCATION BY
MUNICIPAL AUTHORITY OF THE
BOROUGH OF SHENANDOAH

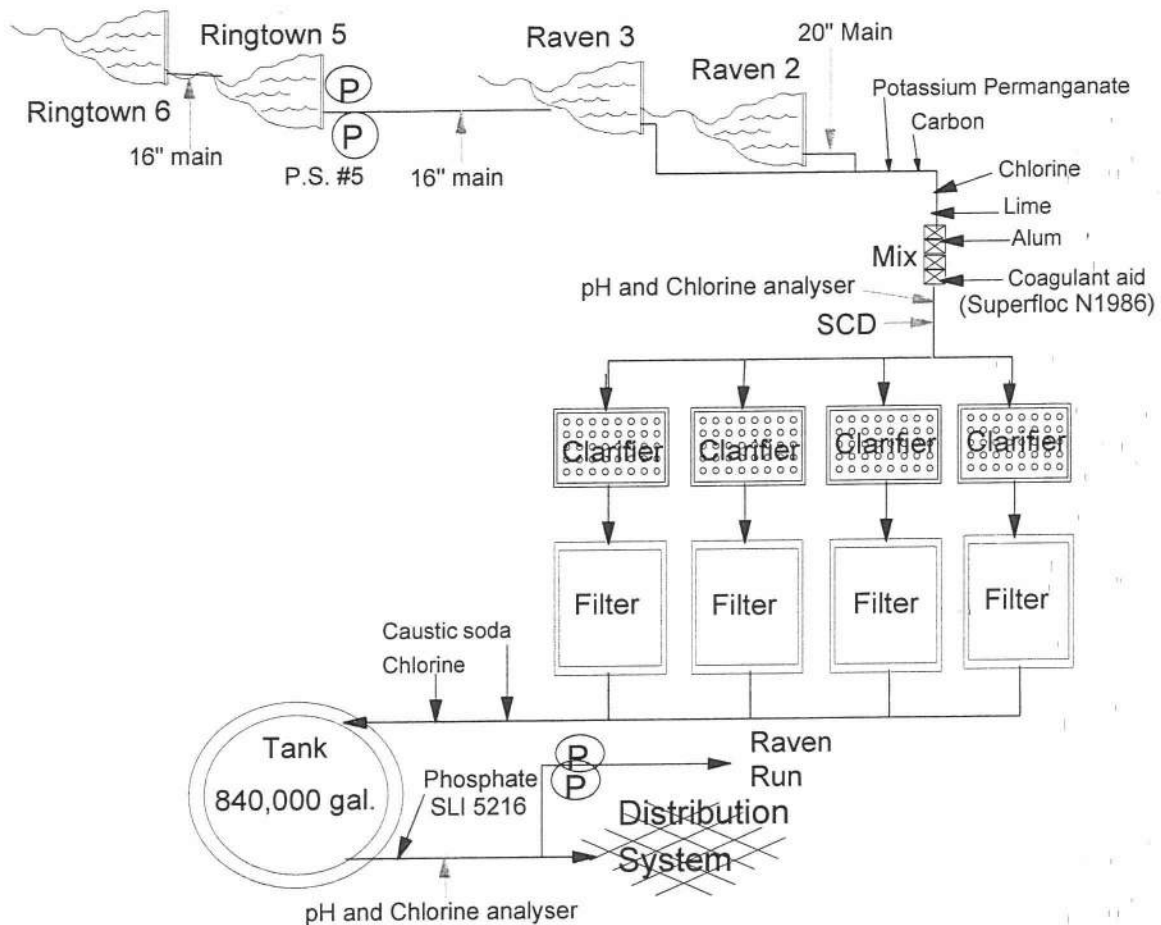
I. INTRODUCTION

On January 29, 2007, the Department of Environmental Protection (Department) received a water allocation application from the Municipal Authority of the Borough of Shenandoah (MABS), with its principal offices located in Shenandoah Borough, Schuylkill County, Pennsylvania. MABS is requesting a renewal of the current withdrawal allocation from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Peak Day, Ringtown No. 5 (Dreshers Run) 0.5 MGD Peak Day, and Raven Run No. 2 (up to 0.05 MGD Peak Day). Raw water flows from Ringtown No. 6 by gravity through 2 miles of 16-inch pipe to Ringtown Reservoir No. 5. From here, it is pumped about 1.2 miles over Locust Mountain to Raven Run Reservoir No. 3 and Raven Run No. 2 (which are treated as one combined unit). Raw water from Raven Run No. 3 flows by gravity to Raven Run No. 2 and all flow is taken from Raven Run No. 2. The intake on Raven Run No. 3 is for emergency use and rarely utilized.

In order to more accurately reflect the cascading nature of the flows to the reservoirs, the following allocation amounts have been adjusted: from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Average Annual, Ringtown No. 5 (Dreshers Run) 2.0 MGD Average Annual, and Raven Run No. 2 2.05 MGD Average, for a total withdrawal not to exceed 2.05 MGD Average Annual as measured below Raven Run No. 2 at the influent raw water meter to the Shenandoah Water Treatment Plant. Conservation releases of 460,000 gpd for Ringtown No. 6, 210,000 gpd for Ringtown No. 5, and 250,000 for Raven Run No. 2 will also be required by the Department in this subject water allocation renewal. Note that Kehly Run Reservoirs and Fetter Lake sources will be abandoned. A schematic of the system is shown in **figure 1** below.

Notice of the Municipal Authority of the Borough of Shenandoah (MABS) application was published in the March 17, 2007, issue of the Pennsylvania Bulletin in accordance with the Act of February 17, 1984 (P.L. 75, No. 14), 71 P.S. §510-5, Municipal Authority of the Borough of Shenandoah, provided proof of notification of this application to Shenandoah Borough, Butler Township, West Mahanoy Township and Schuylkill County.

Figure 1: Shenandoah WTP Schematic



II. ALLOCATION HISTORY

The Municipal Authority of the Borough of Shenandoah (MABS) currently has one water allocation WA54-44B. The history of MABS water allocation permit began with the chartering of Shenandoah Citizens Water and Gas Company on February 25, 1870 with the only water source being Kehly's Run for 300 mgpy. Permit WA-44A was approved August 18, 1943, for 310 million gallons per year, to Shenandoah Citizens Water and Gas Company, but was revoked with the issuance of a water allocation permit to the Municipal Authority of the Borough of Shenandoah on November 14, 1950. Permit WA-44A included the following sources and allocation limits: a) Little Catawissa Creek – 575,000 gallons per day, b) Whiskey Mill Run – 1,500,000 gallons per day, c) Dresher's Run – 500,000 gallons per day, d) Raven Run – 50,000 gallons per day, e) Kehly Run – 800,000 gallons per day, and, f) W.P.A. Reservoir – 75,000 gallons per day. All sources total 3,500,000 gallons per day. Permit WA-44B was issued on November 10, 1964 for Fetter Pond (600,000 gpd). Information submitted in the application shows that Kehly Run Reservoirs and Fetter Lake sources will be abandoned. Daily Withdrawals are from two (2) sources, Ringtown No. 6 (Whiskey Mill Run) and Ringtown No. 5 (Dresher's Run). The Average Daily Withdrawals (gpd) are estimated to be 66,164 – 393,625 and 1,027,586 – 1,803,397

gpd, respectively. Water from Ringtown Reservoir No. 6 flows by gravity through a 16-inch pipe about 2 miles east to Ringtown Reservoir No. 5. Water is pumped from Pump Station No. 5 to the Raven Run Reservoirs (Raven Run No. 2 and No. 3). Water is then gravity fed to the water treatment plant (WTP), treated and fed to the distribution system. Raven Run No. 2 and No. 3 are used as raw water storage reservoirs for water going to the WTP.

Currently, metering is only performed at the WTP. A permit condition will require a permanent meter or measuring device installation on the raw water transmission main between Ringtown No. 6 and Ringtown No. 5 reservoirs.

MABS is not expecting any future growth and is requesting the right to continue to withdraw water at the previously allotted rate totaling 2.05 MGD. 1.5 MGD will come from Ringtown Reservoir No. 6, 2.0 MGD will come from Ringtown Reservoir No. 5 (1.5 MGD from Ringtown 6 plus 0.5 MGD from Ringtown No. 5 which equals 2.0 MGD) and 2.05 MGD will come from Raven Run Reservoir No. 2 (1.5 MGD from Ringtown 6 plus 0.5 MGD from Ringtown No. 5 plus 0.05 MGD from Raven Run No. 2 which equals 2.05 MGD), for a total withdrawal not to exceed 2.05 MGD Average Annual as measured below Raven Run No. 2 at the influent raw water meter to the Shenandoah Water Treatment Plant. Conservation releases of 460,000 gpd for Ringtown No. 6, 210,000 gpd for Ringtown No. 5, and 250,000 gpd for Raven Run No. 2 will also be required by the Department in this subject water allocation renewal.

MABS did not have any formal leak detection program in place at the time of application filing (February 23, 2007) but intended to purchase new leak detection equipment and develop a formal leak detection program. MABS still does not have a formal leak protection program to date. Leaks identified in the system are repaired on an as located basis. The volume of the leak during each incident is estimated and documented. The MABS is in the process of working with the Department's Operator Outreach Program to conduct a water audit and leak detection surveys. Development of a leak detection plan and its implementation will be required as a permit condition in the subject renewal.

III. COMMENTS FROM OTHER AGENCIES

The Department requested comments on the application from the Pennsylvania Fish and Boat Commission (PFBC). No comments were received from the PFBC.

Comments were also requested from PADEP's Division of Water Use Planning, Bureau of Watershed Conservation and are on file with this application submittal.

Water Use Management, Division of Water Use Planning

See Water Allocation memo dated September 9, 2008, from Thomas L. Denslinger, P.E., Chief, Water Use Management Section, Division of Water Use Planning included with the application file.

Also see copy of email from Thomas L. Denslinger, P.E. dated August 22, 2008 included with the application file.

A meeting was held with the NERO and MABS personnel on December 18, 2008, regarding the deficiency letter from the Department dated October 31, 2008. Issues discussed in that meeting included conservation releases, gross yields, service to Butler Township, pumping from RR#3 to RR#2, updating of drought contingency plan and Act 220 registration and reporting requirements. Regarding conservation releases, the Department offered to provide a calculation method to MABS for figuring the conservation release required for all sources (YAT Modeling performed by Central Office); gross yields are based on 50 year drought yield from Bulletin 7A published by the Department. Links were to be provided to MABS from the Department; service to Butler Township is decreasing in Rappahannock section leased land. The decreased infrastructure means less service; water from RR#2 is of higher quality; RR#3 should be permitted and language explaining water draw from RR#2 and RR#3 will be included in application materials; drought contingency plan should be updated; MABS will supply information for Raven Run No. 2 that was not submitted for the 2005 reporting year. A revised water allocation application with sources adjusted to address Central Office's withdrawal amounts comments was to be submitted by the applicant. See February 6, 2009 letter and email dated April 22, 2014 from Entech Engineering, Inc. submitted as a follow-up to the meeting held on December 18, 2009 which addresses Department comments.

Additional comments and YAT modeling was provided by Central Office to NERO on September 28, 2017 and are as follows. The original is included with the application file.

The MABS is requesting the right to withdraw 1,500,000 gpd (PD) from the Ringtown No. 6 Dam, 500,000 gpd (PD) from Ringtown No. 5 Reservoir, and 50,000 gpd (PD) from Raven Run No. 2 for a total of 2,050,000 gpd. An Average Annual (AA) allocation type is recommended for reservoirs. Using the Water Use Reporting data for the period of 2005-2016, the water use ranged between 1,027,586 gpd and 1,183,7261 gpd from the Ringtown No. 6 source, and 66,164 gpd and 393,625 gpd from Ringtown No. 5. Raven Run No. 2 was not used from 2008 to 2012; using the Water Use Reporting data for the period of 2013-2016 for Raven Run No. 2 the water use ranged between 1,583,203 gpd and 1,803,397 gpd.

Individual reservoir yield analyses were conducted for Ringtown No. 5 and No. 6 reservoirs; the YAT reservoir analysis showed that a conservation release of 0.32 cfs (210,000 gpd) and 0.71 cfs (460,000 gpd) respectively, is required. In this case, the conservation release is based on the Stream Classification (CWF, 20% of ADF). To determine the net yield for Ringtown No. 5; the default 50-year drought frequency was used; the YAT computed a net yield (after the conservation release) of 0.62 MGD. This net yield value is higher than the requested quantity. The same method of computation was used to determine the net yield for Ringtown No. 6; when 50-year drought frequency was used, the YAT computed a net yield (after the conservation release) of 0.81 MGD. This net yield value is lower than the requested allocation. When a 2-year drought frequency was utilized for the analysis, the YAT computed a net yield (after the conservation release) of 1.27 MGD for Ringtown No. 6.

The same method of computation was used to determine the conservation release and net yield for Raven Run reservoirs; the calculations were based on assumption that flow from Raven Run No. 3 flows by gravity to Raven Run No. 2 and that all flow is taken from Raven Run No. 2. Therefore, the YAT analysis combines the drainage area and storage capacities for both Raven Run No. 2 and No. 3 for this analysis, with the sole taking point at Raven Run No. 2. The YAT calculated a conservation

release of 0.38 cfs (250,000 gpd) based on 20% ADF. For Raven Run No. 2 & No. 3, using a 50-year drought frequency, the YAT computed a net yield (after the conservation release) of 0.44 MGD, which is higher than the requested amount, but much lower than their actual usage for the last 3 years. A 2-year drought frequency was utilized for the analysis, and the YAT computed a net yield (after the conservation release) of 0.69 MGD.

The YAT analysis showed a net yield of 620,000 gpd, 1,270,000 gpd, 700,000 gpd for Ringtown No. 5, Ringtown No. 6, and Raven Run No. 2 & No. 3 (combined) respectively. The results are summarized below.

Source	Average Daily Usage (gpd)	Requested Amount (gpd)	YAT: Net Yield (gpd) (2-yr ¹)	YAT: Net Yield (gpd) (50-yr ¹)	YAT: Conservation Release (gpd)
Ringtown 5	66,164 - 393,625	500,000	N/A	620,000	210,000
Ringtown 6	1,027,586 - 1,183,726	1,500,000	1,270,000	810,000	460,000
Raven Run 2 & 3	1,583,203 - 1,803,397	50,000	700,000	440,000	250,000
Total	1,329,337	2,050,000	N/A	N/A	N/A

¹- Drought frequency used in YAT calculations.

The MABS is requesting the right to allocate 2,050,000 gpd from Ringtown No. 5, Ringtown No. 6, and Raven Run No. 2 & No. 3. The YAT analysis showed a maximum total net yield of 2,590,000 gpd (using 50-yr drought frequency for Ringtown No. 5, and the 2-yr drought frequency for Ringtown 6 and Raven Run). Although this is higher than their requested amount, the amount allocated for each individual source should be adjusted (for example, note that the average usage from Raven Run is much higher than the requested amount). The allocation amounts were adjusted per Central Office comment and the cascading nature of the reservoirs as noted previously.

A meeting was held by the Department with the MABS and their consultant (Alfred Benesch & Company) on November 6, 2017, to discuss the proposed draft permit provided to MABS for comment on October 16, 2017. Items discussed of note included average annual allocation amounts for sources, new conservation release requirements, measuring device installation requirements, and leak detection plan and implementation requirements. MABS and their consultant did not have any objections or comments on the proposed draft permit.

IV. WATER USE

Table 1 contains MABS past water use for the period 2005 to 2016, respectively, while Table 2 contains a breakdown of its water use. The data for all tables is from Annual Water Supply Reports for MABS.

Table 1 - Past Water Use

Year	Average Daily Use (gpd)	Peak Day Use (gpd)	Peak to Average <u>Ratio</u>
2005	1,158,263	1,349,000	1.16
2006	1,153,004	1,632,000	1.42
2007	1,777,632	2,003,000	1.13
2008	1,110,100	1,936,000	1.74
2009	466,800	1,859,000	3.98
2010	1,275,757	1,963,000	1.54
2011	1,201,836	1,530,000	1.27
2012	1,255,754	1,735,000	1.38
2013	1,284,419	1,920,000	1.49
2014	1,781,372	3,000,000	1.68
2015	1,803,397	2,628,000	1.46
2016	1,683,707	1,965,917	1.21
Averages:	<u>1,329,336</u>	<u>1,960,076</u>	<u>1.61</u>

Table 2 represents the water use and was taken from MABS 2016 WUDS Annual Summary Data submitted to the Department.

Table 2 - Water Use

<u>Use Category</u>	<u>Number of Connections</u>	<u>Water Use (gpd)</u>	<u>Percent of Total Use</u>
Domestic	2,736	259,600	15.42
Commercial	181	36,300	2.16
Industrial	6	67,350	4.00
Institutional	29	34,370	2.04
Bulk Sales to Other Suppliers	0	0	0
OG	0	0	0

Other	15	256,338	15.22
Leakage and Loss Unaccounted-for	-	1,029,749	61.16
	-	-	-
<u>Totals:</u>	<u>2,967</u>	<u>1,683,707</u>	<u>100%</u>

Using the Chapter 110 reported data for the period of 2005 – 2016, the total average daily use of all sources was 1,1329,337 gpd and ranged between 466,800 gpd and 1,803,397 gpd. Peak day use averaged 1,965,917 gpd and ranged between 1,349,000 gpd and 3,000,000 gpd.

Based on the MABS Water Use and Population growth figures submitted with the Water Allocation permit application and AWS report for 2016, MABS is currently serving 2,967 domestic locations. Political subdivisions served include Shenandoah Borough, West Mahanoy Township and Butler Township. According to the population projections submitted in the Annual Water Supply Report for 2016, the actual population served is approximately 9,000 people.

The last updated service map was in 2008. Updated maps should be submitted periodically through Greenport. The YAT analysis showed the MABS projected population as follows: Year 2020 - 6,017, Year 2030 – 5,847 and Year 2040 – 5,671 which are very close to the MABS's projections. Since the application was submitted in 2007, year 2040 was obviously not included in the application submittal.

All service connections are reported to be metered.

V. WATER SUPPLY AVAILABLE

The MABS currently operates under water allocation permit WA54-44A. Permit WA54-44A was issued on November 14, 1950, for the right to withdraw raw water from the following sources: Little Catawissa Creek, Whiskey Mill Run, Dreshers Run, Raven Run, Kehly Run and W.P.A. Reservoir. The allocation history lists the quantities removed from each source. The current waters supply available comes from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Peak Day, Ringtown No. 5 (Dreshers Run) 0.5 MGD Peak Day, and Raven Run No. 2 (up to 0.05 MGD, Peak Day) from permit WA54-44B.

Three taking points are listed in the application submittal as follows:

Ringtown No. 6 (Whisky Mill Run)	Lat 76° 16' 50"W/Long 40° 49' 50" N
Ringtown No. 5 (Dreshers Run)	Lat 76° 14' 47"W/Long 40° 50' 32" N
Raven Run No. 2	Lat 76° 14' 26"W/Long 40° 49' 21" N

No interconnections are identified in the application submittal.

The MABS water allocation application included a description of the Shenandoah WTP. The system supplies water to the Borough of Shenandoah and to a portion of West Mahanoy and Butler Townships in Schuylkill County, Pennsylvania.

The current water system consists of the following components:

Four raw water reservoirs: Ringtown No. 6, Ringtown No. 5, Raven Run No. 3 and Raven Run No. 2,

Three booster pump stations: Pump Station 5, Pump Station 3 and Turkey Run Pump Station,

Four finished water storage tanks: WTP Tank, Kehly Run Tank, Cemetery Tank and Turkey Run Tank for a total storage capacity of 2,500,000 gallons.

The WTP which was constructed in July 1995. The plant consists of treatment with adsorption clarifiers and multimedia filters. Typically, the plant produces about 1.0 MGD. The plant is rated at 3.11 MGD. and;

The distribution system, totaling 35 miles of pipeline consisting of 16-inch through 4-inch ductile iron and cast-iron piping.

Water was served from two watershed areas, one from Ringtown and Raven Run reservoirs and the other from the Kehly Run Reservoirs and Fetter Lake. The Kehly Run Dams (No. 3, 4, 5 and 6) and Fetter Lake are located northeast of the Borough of Shenandoah. The Kehly Run Reservoirs and Fetter Lake have not been used since 1992 and are to be abandoned.

Wastewater is sent to the Shenandoah Sewage Treatment Plant (1.58 MGD) which is experiencing infiltration issues and does not serve the entire service area and ultimately, after treatment, to the Shenandoah Creek.

Leakage and loss reported for the previous year (2016) was at 61%. This is above the recommended 20% minimum unaccounted-for usage. MABS shall continue to review and revise, as necessary, its leak detection efforts and develop a leak detection plan to maintain its unaccounted-for waster loss at 20 percent or less. A permit condition will address this issue.

The MABS has included a water conservation plan with the water allocation permit application. The plan includes: Source Metering, Service Metering, Leak Detection and Repair, and Water Conservation Performance Standards and should be reviewed and updated periodically as necessary. MABS Drought Contingency Plan should be updated and should be submitted electronically through Greenport.

MABS does not have a formal leak protection program. Leaks identified in the system are repaired on an as located basis. The volume of the leak during each incident is estimated and documented. The MABS is in the process of working with the Department's Operator Outreach Program to conduct a water audit and leak detection surveys.

VI. DETERMINATIONS BEFORE GRANTING PERMIT

Section 7 of the Water Rights Act of June 24, 1939 outlines the duties of the Commonwealth to investigate water allocation requests, consider conflicts of interest, and to give approval. Approval of

the requested allocation shall be given where it is determined that the:

- A. Proposed new source of supply will not conflict with the water rights held by any other public water supply agency.
- B. Water and water rights proposed are reasonably necessary for the present purposes and future needs of the public water supplier making application.
- C. Taking of said water or exercise of water rights will not interfere with navigation.
- D. Taking of said water or exercise of water rights will not jeopardize public safety.
- E. Taking of said water or exercise of water rights will not cause substantial injury to the Commonwealth.

In cases of apparent conflicts of interest, the Commonwealth investigations shall consider the extent of conservation development and use of the existing sources of water to the best advantage.

The Department of Environmental Protection has reviewed the proposed allocation and considered all the issues requiring evaluation under Section 7 of the Water Rights Act. A summary of the findings and conclusions regarding these issues follows:

- A. The Department finds that there are no conflicts with the water rights of other agencies.
- B. Water and water rights proposed are reasonably necessary for the present purposes and future needs of the public water supply agency.
- C. The Department finds that granting the allocation will have no adverse effect on navigation.
- D. The Department finds that granting the allocation will have no adverse effect on public safety.
- E. The Department finds that granting the allocation will have no significant adverse effect on the environment.
- F. Municipal Authority of the Borough of Shenandoah shall abide by the approved water conservation plan under Water Allocation permit WA54-44C.
- G. Article I, Section 27 of the Pennsylvania Constitution, as adopted in 1971 states:

The people have a right to clean air, pure water, and to the preservation of the natural scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all of the people.

The Amendment does not require the passage of implementing statutes or promulgation of regulations because it is self-executing and establishes rights which it is DEP's duty to protect Commonwealth v. National Gettysburg Battlefield Tower Inc., 8 Pa. Cmwlth, 231, 302A.2d886 (1973), affirmed, 454 PA., 193,311.A.2d 588 (1973). In protecting these rights, DEP is required to measure its actions concerning issuance of a permit by the three point test announced in Payne et al. v. Kassab et al., 11 Pa. Cmwlth. 14, 312A.2d86 (1973), affirmed, 14 Pa. Cmwlth, 491, 323A.2d 407 (1974), affirmed, 468 Pa. 266, 361A2d. 263 (1976). This test is:

1. Was there compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth's public natural resources?
2. Does the record demonstrate a reasonable effort to reduce environmental incursion to a minimum?
3. Does the environmental harm which will result from the challenged decision or action so clearly outweigh the benefits to be derived therefrom that to proceed further would be an abuse of discretion?

The Department has made the following findings under the three point test from Payne et al. v. Kassab et al.

1. Compliance with All Applicable Statutes and Regulations

Compliance with All Applicable Statutes and Regulations has been accomplished.

2. Reasonable Effort to Reduce Environmental Incursion

Reasonable Effort to Reduce Environmental Incursion has been undertaken.

3. Environmental Harm Outweighs the Benefit

Any Environmental Harm has been mitigated. The benefits of continuous, clean, safe filtered water for the term of this permit have been accomplished.

VII. RECOMMENDATIONS

The application submitted by the MABS has been carefully reviewed and considered. It is recommended that the MABS be granted a permit for the right to withdraw from Ringtown No. 6 (Whiskey Mill Run) 1.5 MGD Average Annual, Ringtown No. 5 (Dreshers Run) 2.0 MGD Average Annual, and Raven Run No. 2 2.05 MGD Average Annual, for a total withdrawal not to exceed 2.05 MGD Average Annual as measured below Raven Run No. 2 at the influent raw water meter to the Shenandoah Water Treatment Plant. Conservation releases of 460,000 gpd for Ringtown No. 6, 210,000 gpd for Ringtown No. 5, and 250,000 for Raven Run No. 2 are required from permit WA54-

44C.

It is also recommended that the allocation permit contain the following special conditions:

Condition 1:

Duration of Permit: The duration of this permit shall be for a period of 25 years and shall expire on November 21, 2042. However, should the permittee for any reason whatsoever (1) fail to construct within a period of four years the works necessary for the development of the supply of water allocated under this permit, or (2) fail to take and use within a period of four years the water or water rights for which this permit is issued, or (3) cease for any period of seven consecutive years to take and use the water hereby allocated, then this permit shall cease and be null and void; unless upon application by the permittee an extension of such period is granted by the Department of Environmental Protection's Northeast Regional Office;

Condition 2:

Measuring Device and Reporting Requirement: The permittee shall install accurate measuring and recording instruments or devices on the raw water transmission main between Ringtown No. 6 and Ringtown No. 5 reservoirs to determine the amount of water transferred. The design and layout of said measuring devices shall be submitted to and be approved by the Department of Environmental Protection's Northeast Regional Office before installation. Records of daily flow readings shall be submitted on a monthly basis to the Department's Permits Division in the Bureau of Safe Drinking Water (preferably electronically), and the original field records shall be available at all times for inspection by representatives of the Department. The required measuring devices shall be installed and readings shall begin within 1 year from the date of this permit, for all existing sources. This deadline may be extended at the Department's discretion if the permittee makes a written request to the Department of Environmental Protection's Northeast Regional Office;

Condition 3:

Conservation Release, Measuring Device and Reporting Requirement: A continuous flow of not less than 0.39 cubic feet per second per square mile from the 1.81 square miles of watershed area above the Ringtown No. 6 reservoir shall be maintained at all times immediately below Ringtown No. 6. This flow is equivalent to 460,000 gallons per day or 0.71 cubic feet per second. A continuous flow of not less than 0.38 cubic feet per second per square mile from the 0.83 square miles of watershed area above the Ringtown No. 5 reservoir shall be maintained at all times immediately below Ringtown No. 5. This flow is equivalent to 210,000 gallons per day or 0.32 cubic feet per second. A continuous flow of not less than 0.41 cubic feet per second per square mile from the 0.93 square miles of watershed area above the Raven Run No. 2 reservoir shall be maintained at all times immediately below Raven Run No. 2. This flow is equivalent to 250,000 gallons per day or 0.38 cubic feet per second. The permittee shall install accurate measuring and recording instruments or devices to determine the amount of flow in the stream channel. The design and layout of said measuring devices shall be submitted to and be approved by the Department of Environmental Protection's Northeast Regional Office before installation. Records of daily flow readings shall be submitted on a monthly basis to the Department's Permits Division in the Bureau of Safe Drinking Water (preferably

electronically), and the original field records shall be available at all times for inspection by representatives of the Department. The required measuring devices shall be installed and readings shall begin within 1 year from the date of this permit. This deadline may be extended at the Department's discretion if the permittee makes a written request to the Department of Environmental Protection's Northeast Regional Office. The passby flow/conservation release specified herein may be temporarily modified by the Department's Commonwealth Drought Coordinator or the Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning in writing during an emergency, upon written request from the permittee and satisfactory demonstration that the permittee has taken all reasonable conservation measures to avert and mitigate the emergency condition;

Condition 4:

Operations and Drought Contingency Plan: The permittee shall develop a contingency plan outlining the measures that will be taken to conserve the available supply and reduce water use during an emergency (e.g., drought, industrial waste spill, etc.). The plan shall include staged voluntary and mandatory water use restrictions and a description of parameters to trigger these actions at various stages, and the identification of available emergency sources or interconnections and when these sources would be utilized. The plan shall also indicate how water use restrictions will be enforced. The contingency plan shall be adopted by the permittee and submitted to the Department of Environmental Protection's Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning within one year of the date of this permit and updated and submitted to the Department every three years thereafter or within six months of the addition or abandonment of any source of supply;

Condition 5:

Drought Contingency Plan: The permittee shall respond to drought conditions as outlined within the Municipal Authority of the Borough of Shenandoah Drought Contingency Plan. The permittee shall impose water use restrictions upon customers in accordance with and at such time as actions which are required of customers served by the Municipal Authority of the Borough of Shenandoah;

Condition 6:

Water Conservation: The permittee shall adopt and implement a continuous water conservation program for all types of use within the area served by this permit. This program shall include, but is not limited to:

- The installation of water meters on all unmetered customer connections;
- An ongoing program for installing meters at all new customer connections;
- An ongoing program for regularly testing and repairing or replacing all meters;
- An ongoing leakage/loss control program;

- A water conservation education program;
- A program for reducing customer demand for water by requiring the installation of water-saving plumbing devices in all new accounts or promoting the adoption of water conservation ordinances;

The permittee's water conservation program shall comply with the water conservation policies of the Susquehanna River Basin Commission and the recommendations of the Department's Northeast Regional Office contained in the report on this allocation.

Condition 7:

Permit Compliance Reporting: The permittee shall submit a permit compliance report to the Department of Environmental Protection's Permits Division in the Bureau of Safe Drinking Water, on forms provided by the Department, annually, on or before the anniversary date of this permit, unless otherwise specified;

Condition 8:

Chapter 110 Requirements: The permittee shall register each source/interconnection approved under this permit and submit reports in accordance with 25 Pa. Code Chapter 110 Regulations. Registration and reporting shall be to the Department's Division of Planning and Conservation under the Special Deputy Secretary for Water Resources Planning;

Condition 9:

Prohibition on Supplying Water to Other Public Water Suppliers: The permittee shall not supply any new or additional quantity of water to any public water supply agency until that agency shall have first obtained from the Department of Environmental Protection's Northeast Regional Office a subsidiary water allocation permit for the specific purchase quantity;

Condition 10:

Reduction of Water Losses: Within one year of the date of this permit, the permittee shall initiate a study to develop a plan to reduce its unaccounted-for water loss and shall reduce such loss to a level of 20 percent or less within five years of the date of this permit. Such study shall be completed and the final results and recommendations reported to the Department of Environmental Protection's Northeast Regional Office, with a copy to the Permits Division in the Bureau of Safe Drinking Water within two years of the date of this permit. The deadlines set forth in this condition may be extended with written approval by the Northeast Regional Office, upon good cause shown, providing that the permittee demonstrates satisfactory and good faith progress toward compliance with this condition;

Condition 11:

Revocation of Permit: Water Allocation Permit WA54-44A, issued to the Municipal Authority of the Borough of Shenandoah on **November 14, 1950** and granting 3,500,000 gallons per day from Little Catawissa Creek, Whiskey Mill Run, Dresher's Run, Raven Run No. 2, Kehly Run and W.P.A. reservoir is hereby revoked and shall be returned to the Department of Environmental Protection's Northeast Regional Office;

Condition 12:

Revocation of Permit: Water Allocation Permit WA54-44B, issued to the Municipal Authority of the Borough of Shenandoah on **November 10, 1964** and granting the right to withdraw 600,000 gallons per day from Fetter Pond is hereby revoked and shall be returned to the Department of Environmental Protection's Northeast Regional Office;

Condition 13:

Renewal Requirement: Within 18 months, but no less than one year, prior to the expiration date specified in Condition No. 1, the permittee shall submit to the Department of Environmental Protection's Northeast Regional Office a complete and acceptable application for a new permit, if permittee desires to continue to acquire the water rights granted by this permit beyond the expiration date. Upon the Department's acceptance of such application for review, the expiration date of this permit shall be extended during the review period until issuance or denial of said new permit;

Condition 14:

Permit Modification: This permit is subject to review and possible modification of said rights, conditions, or restrictions at a later date or dates, as provided in Section 7 of the Act of June 24, 1939, P.L. 842 (No. 365).

This report was prepared by:



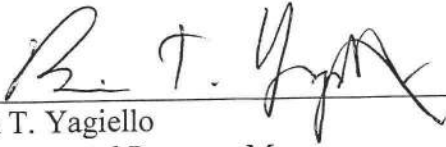
Deborah S. Wilkes
Technical Services Section
Safe Drinking Water Program

This report was reviewed and respectfully submitted by:



Brian Busher, P.E.
Environmental Engineer Manager
Safe Drinking Water Program

The foregoing recommendation is concurred in:

A handwritten signature in black ink, appearing to read "B. T. Yagiello", is written over a horizontal line.

Brian T. Yagiello
Environmental Program Manager
Safe Drinking Water Program

Date: November 21, 2017



August 20, 2021

VIA ELECTRONIC MAIL

Jennifer Hepler
Shenandoah Borough Municipal Authority Schuylkill County
PO Box 110 Route 4032
Shenandoah, PA 17976-0110

Re: Final NPDES Permit- Industrial Waste
Shenandoah WTP
NPDES Permit No. PA0062758
Authorization ID No. 1217421
West Mahanoy Township, Schuylkill County

Dear Ms. Hepler:

Your NPDES permit is enclosed. Please read the permit carefully. The permit expires on the date identified on page 1 of the permit. A renewal application must be submitted to this office 180 days prior to the permit expiration date, if a discharge is expected to continue past the expiration date of the permit.

Please note the following:

1. Part C.III (WQBELs for Toxic Pollutants):
 - a. The Schedule of Compliance interim milestone dates have been adjusted to the quarterly reporting dates specified by Chapter 92a.51.
 - b. The permittee may, at its discretion, submit a work plan to DEP for review and comment prior to initiating the site-specific data collection studies. If the permittee decides to submit a work plan, DEP's approval is not necessary prior to commencing the studies.
 - i. The Department is available if you have specific questions on the process or requirements. See the DEP Policy No. BCW-PMT-037 (Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers), available on the DEP SOP webpage, for more information on the process and options available to you.
 - ii. As a Water Treatment Plant, the Department directs your attention to Chapter 95.2(5): "When surface waters are used in the industrial plant, the quality of the effluent need not exceed the quality of the raw water supply if the source or supply would normally drain to the point of effluent discharge, unless otherwise required under the act or Federal Act or regulations promulgated thereunder". This option would require

Ms. Jennifer Hepler

- 2 -

August 20, 2021

determination of in-stream conditions using sufficiently sensitive analytical methods (i.e. meeting DEP Target Quantitation Limits that can be found in the IW NPDES Permit Application form instructions). If you choose to conduct additional sampling at permitted monitoring points (including intake sampling), NPDES Permit Part A.III.B.7 requires reporting via DMR.

2. Enclosed are Discharge Monitoring Report (DMR) templates and DMR instructions. It is recommended that you retain the DMR templates in the event you are unable to submit DMRs electronically through DEP's eDMR system. Routine use of the eDMR system is a requirement of the permit unless the conditions in Part A III.B.3 of the permit are met to submit hard copies.

Also enclosed is a Supplemental Form Inventory, which identifies the forms that are attached to the permit and must be submitted as attachments to eDMR reports, as applicable (see individual form instructions). The submission of other supplemental forms may be required in accordance with the permit. We encourage you to use the spreadsheet versions of supplemental forms that contain appropriate validation and DEP-approved calculations.

3. Part C of the permit contains requirements relating to chemical additives (if used in the future). These requirements have changed in comparison to previous permits. Please review the chemical additives requirements carefully and contact this office if you have questions. Additional information may be found on DEP's website at www.dep.pa.gov/chemicaladditives.

We would like to bring DEP's eNOTICE service to your attention. eNOTICE is a subscription service that provides options to receive notifications of DEP's activities such as the receipt of permit applications, comment periods for guidance and regulations, and stream redesignation evaluations. To sign up for an account, visit DEP's website (www.dep.pa.gov) and select Data and Tools – Tools – eNOTICE.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Ms. Jennifer Hepler

- 3 -

August 20, 2021

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions, please contact James Berger at 570.826.2308 or at jaberger@pa.gov.

Sincerely,

B R Patel

Bharat Patel, P.E.
Environmental Program Manager
Clean Water Program

Enclosures

cc: Alfred Benesch & Co.
Central Office, Division of Operations



AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR INDUSTRIAL WASTEWATER FACILITIES

NPDES PERMIT NO: PA0062758

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

**Shenandoah Borough Municipal Authority Schuylkill County
PO Box 110 Route 4032
Shenandoah, PA 17976-0110**

is authorized to discharge from a facility known as **Shenandoah Water Treatment Plant (WTP)**, located in **West Mahanoy Township, Schuylkill County**, to **Lost Creek (CWF)** in Watershed(s) **6-B** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON SEPTEMBER 1, 2021

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON AUGUST 31, 2026

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.
2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))
3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d)(2))

In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code §§ 92a.7 (b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED August 20, 2021

ISSUED BY B R Patel
Bharat Patel, P.E.
Environmental Program Manager
Northeast Regional Office

Permit No. PA0062758

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001, Latitude 40° 49' 6.00", Longitude 76° 14' 33.00", River Mile Index -, Stream Code 17684

Receiving Waters: Lost Creek (CWF)

Type of Effluent: Water Treatment Effluent

1. The permittee is authorized to discharge during the period from **September 1, 2021** through **August 31, 2024**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.50	XXX	1.00	1/week	Grab
Aluminum, Total	4.27	Report	XXX	4.000	8.000	10.000	1/week	24-Hr Composite
Cadmium, Total (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Copper, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Iron, Total	2.14	Report	XXX	2.000	4.000	5.000	1/week	24-Hr Composite
Lead, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Acrylamide	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Permit No. PA0062758

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001, Latitude 40° 49' 6.00", Longitude 76° 14' 33.00", River Mile Index -, Stream Code 17684

Receiving Waters: Lost Creek (CWF)

Type of Effluent: Water Treatment Effluent

1. The permittee is authorized to discharge during the period from **September 1, 2024** through **August 31, 2026**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.05	XXX	0.17	1/day	Grab
Aluminum, Total	1.38	1.70	XXX	0.750	0.927	0.927	1/week	24-Hr Composite
Cadmium, Total (ug/L)	0.0001	0.0003	XXX	0.10*	0.16*	0.25	1/week	24-Hr Composite
Copper, Total (ug/L)	0.005	0.007	XXX	2.87*	3.73*	3.73*	1/week	24-Hr Composite
Iron, Total	2.14	Report	XXX	1.883	2.938	4.708	1/week	24-Hr Composite
Lead, Total (ug/L)	0.0009	0.0010	XXX	0.49*	0.76*	1.22*	1/week	24-Hr Composite
Acrylamide (ug/L)	0.0005	0.0008	XXX	0.28	0.43	0.69	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

*See Part C.IV (WQBELs below Quantitation Limits)

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. C. For Outfall 001, Latitude 40° 49' 6.00", Longitude 76° 14' 33.00", River Mile Index -, Stream Code 17684

Receiving Waters: Lost Creek (CWF)

Type of Effluent: Water Treatment Effluent

1. The permittee is authorized to discharge during the period from **September 1, 2021** through **August 31, 2026**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Suspended Solids	Report	XXX	XXX	30.0	Report	60.0	1/week	24-Hr Composite
Manganese, Total	1.07	Report	XXX	1.000	2.000	2.500	1/week	24-Hr Composite
Nickel, Total (ug/L)	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Selenium, Total (ug/L)	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Zinc, Total (ug/L)	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Permit No. PA0062758

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. D. For Outfall 101, Latitude 40° 49' 6.00", Longitude 76° 14' 33.00", River Mile Index -, Stream Code 17684

Receiving Waters: Lost Creek via Water Treatment Plant

Type of Effluent: Intake water

1. The permittee is authorized to discharge during the period from **September 1, 2021** through **August 31, 2026**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD) Intake	Report	Report	XXX	XXX	XXX	XXX	Upon Request	Measured
Aluminum, Total Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Cadmium, Total (ug/L) Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Copper, Total (ug/L) Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Iron, Total Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Lead, Total Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Manganese, Total Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Nickel, Total (ug/L) Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Selenium, Total (ug/L) Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite
Zinc, Total (ug/L) Intake	Report	Report	XXX	Report	Report	XXX	Upon Request	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
at Outfall 101

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS
(Continued)**

Additional Requirements

The permittee may not discharge:

1. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code § 92a.41(c))
2. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))
3. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code § 93.6(a))
4. Foam or substances that produce an observed change in the color, taste, odor or turbidity of the receiving water, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. For the purpose of determining compliance with this condition, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water. (25 Pa Code § 92a.41(c))

Footnotes

- (1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.
- (2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

Supplemental Information

The effluent limitations for Outfall 001 were determined using an effluent discharge rate of 0.220 MGD.

II. DEFINITIONS

At Outfall (XXX) means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line (XXX), or where otherwise specified.

Average refers to the use of an arithmetic mean, unless otherwise specified in this permit. (40 CFR 122.41(l)(4)(iii))

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollutant loading to surface waters of the Commonwealth. The term also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term includes activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. (25 Pa. Code § 92a.2)

Bypass means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i))

Calendar Week is defined as the seven consecutive days from Sunday through Saturday, unless the permittee has been given permission by DEP to provide weekly data as Monday through Friday based on showing excellent performance of the facility and a history of compliance. In cases when the week falls in two separate months, the month with the most days in that week shall be the month for reporting.

Clean Water Act means the Federal Water Pollution Control Act, as amended. (33 U.S.C.A. §§ 1251 to 1387).

Chemical Additive means a chemical product (including products of disassociation and degradation, collectively "products") introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. The term generally excludes chemicals used for neutralization of waste streams, the production of goods, and treatment of wastewater.

Composite Sample (for all except GC/MS volatile organic analysis) means a combination of individual samples (at least eight for a 24-hour period or four for an 8-hour period) of at least 100 milliliters (mL) each obtained at spaced time intervals during the compositing period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval is proportional to the flow rates over the time period used to produce the composite. (EPA Form 2C)

Composite Sample (for GC/MS volatile organic analysis) consists of at least four aliquots or grab samples collected during the sampling event (not necessarily flow proportioned). A separate analysis should be performed for each sample and the results should be averaged.

Daily Average Temperature means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Daily Maximum Discharge Limitation means the highest allowable "daily discharge."

Discharge Monitoring Report (DMR) means the DEP or EPA supplied form(s) for the reporting of self-monitoring results by the permittee. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Estimated Flow means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

Geometric Mean means the average of a set of n sample results given by the nth root of their product.

Grab Sample means an individual sample of at least 100 mL collected at a randomly selected time over a period not to exceed 15 minutes. (EPA Form 2C)

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act. (40 CFR 122.2)

Hauled-In Wastes means any waste that is introduced into a treatment facility through any method other than a direct connection to the wastewater collection system. The term includes wastes transported to and disposed of within the treatment facility or other entry points within the collection system.

Immersion Stabilization (i-s) means a calibrated device is immersed in the wastewater until the reading is stabilized.

Instantaneous Maximum Effluent Limitation means the highest allowable discharge of a concentration or mass of a substance at any one time as measured by a grab sample. (25 Pa. Code § 92a.2)

Measured Flow means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

Monthly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. (25 Pa. Code § 92a.2)

Municipal Waste means garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility. (25 Pa. Code § 271.1)

Non-contact Cooling Water means water used to reduce temperature which does not come in direct contact with any raw material, intermediate product, waste product (other than heat), or finished product.

Residual Waste means garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law. (25 Pa Code § 287.1)

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii))

Stormwater means the runoff from precipitation, snow melt runoff, and surface runoff and drainage. (25 Pa. Code § 92a.2)

Stormwater Associated With Industrial Activity means the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant, and as defined at 40 CFR 122.26(b)(14) (i) - (ix) & (xi) and 25 Pa. Code § 92a.2.

Total Dissolved Solids means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR Part 136.

Toxic Pollutant means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in these organisms or their offspring. (25 Pa. Code § 92a.2)

III. SELF-MONITORING, REPORTING AND RECORDKEEPING**A. Representative Sampling**

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(j)(1)). Representative sampling includes the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance and changes in treatment plant loading. If possible, effluent samples must be collected where the effluent is well mixed near the center of the discharge conveyance and at the approximate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized. (40 CFR 122.48, 25 Pa. Code § 92a.61)

2. Records Retention (40 CFR 122.41(j)(2))

Except for records of monitoring information required by this permit related to the permittee's sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for 3 years from the date of the sample measurement, report or application, unless a longer retention period is required by the permit. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

3. Recording of Results (40 CFR 122.41(j)(3))

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date and time of sampling or measurements.
- b. The person(s) who performed the sampling or measurements.
- c. The date(s) the analyses were performed.
- d. The person(s) who performed the analyses.
- e. The analytical techniques or methods used; and the associated detection level.
- f. The results of such analyses.

4. Test Procedures

- a. Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of Act 90 of 2002 (27 Pa. C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation.
- b. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be those approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, unless the method is specified in this permit or has been otherwise approved in writing by DEP. (40 CFR 122.41(j)(4), 122.44(i)(1)(iv))
- c. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be sufficiently sensitive. A method is sufficiently sensitive when 1) the method minimum level is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or 3) the method is specified in this permit or has been otherwise approved in writing by DEP for the measured pollutant or pollutant parameter. Permittees have the option of providing matrix or sample-specific minimum levels rather than the published levels. (40 CFR 122.44(i)(1)(iv))

5. Quality/Assurance/Control

In an effort to assure accurate self-monitoring analyses results:

- a. The permittee, or its designated laboratory, shall participate in the periodic scheduled quality assurance inspections conducted by DEP and EPA. (40 CFR 122.41(e), 122.41(i)(3))
- b. The permittee, or its designated laboratory, shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit, in accordance with 40 CFR Part 136. (40 CFR 122.41(j)(4))

B. Reporting of Monitoring Results

1. The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.44, 92a.61(i) and 40 CFR §§ 122.41(e), 122.44(i)(1))
2. The permittee shall use DEP's electronic Discharge Monitoring Report (eDMR) system to report the results of compliance monitoring under this permit (see www.dep.pa.gov/edmr). Permittees that are not using the eDMR system as of the effective date of this permit shall submit the necessary registration and trading partner agreement forms to DEP's Bureau of Clean Water (BCW) within 30 days of the effective date of this permit and begin using the eDMR system when notified by DEP BCW to do so. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))
3. Submission of a physical (paper) copy of a Discharge Monitoring Report (DMR) is acceptable under the following circumstances:
 - a. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.
 - b. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).
4. DMRs must be completed in accordance with DEP's published DMR instructions (3800-FM-BCW0463). DMRs must be received by DEP no later than 28 days following the end of the monitoring period. DMRs are based on calendar reporting periods and must be received by DEP in accordance with the following schedule:
 - Monthly DMRs must be received within 28 days following the end of each calendar month.
 - Quarterly DMRs must be received within 28 days following the end of each calendar quarter, i.e., January 28, April 28, July 28, and October 28.
 - Semiannual DMRs must be received within 28 days following the end of each calendar semiannual period, i.e., January 28 and July 28.
 - Annual DMRs must be received by January 28, unless Part C of this permit requires otherwise.
5. The permittee shall complete all Supplemental Reporting forms (Supplemental DMRs) attached to this permit, or an approved equivalent, and submit the signed, completed forms as attachments to the DMR, through DEP's eDMR system. DEP's Supplemental Laboratory Accreditation Form (3800-FM-BCW0189) must be completed and submitted to DEP with the first DMR following issuance of this permit, and anytime thereafter when changes to laboratories or methods occur. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))
6. The completed DMR Form shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

- For a corporation - by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency - by a principal executive officer or ranking elected official.

If signed by a person other than the above and for co-permittees, written notification of delegation of DMR signatory authority must be submitted to DEP in advance of or along with the relevant DMR form. (40 CFR § 122.22(b))

7. If the permittee monitors any pollutant at monitoring points as designated by this permit, using analytical methods described in Part A III.A.4. herein, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR. (40 CFR 122.41(l)(4)(ii))

C. Reporting Requirements

1. Planned Changes to Physical Facilities – The permittee shall give notice to DEP as soon as possible but no later than 30 days prior to planned physical alterations or additions to the permitted facility. A permit under 25 Pa. Code Chapter 91 may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to DEP, can be used to satisfy the notification requirements of this section.

Notice is required when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b). (40 CFR 122.41(l)(1)(i))
 - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this permit. (40 CFR 122.41(l)(1)(ii))
 - c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii))
 - d. The planned change may result in noncompliance with permit requirements. (40 CFR 122.41(l)(2))
2. Planned Changes to Waste Stream – Under the authority of 25 Pa. Code § 92a.24(a), the permittee shall provide notice to DEP as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream, as specified in paragraphs 2.a. and 2.b., below. Notice shall be provided on the "Planned Changes to Waste Stream" Supplemental Report (3800-FM-BCW0482), available on DEP's website. The permittee shall provide information on the quality and quantity of waste introduced into the facility, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility. The Report shall be sent via Certified Mail or other means to confirm DEP's receipt of the notification. DEP will determine if the submission of a new application and receipt of a new or amended permit is required.
 - a. Introduction of New Pollutants (25 Pa. Code § 92a.24(a))

New pollutants are defined as parameters that meet all of the following criteria:

- (i) Were not detected in the facilities' influent waste stream as reported in the permit application; and

- (ii) Have not been approved to be included in the permittee's influent waste stream by DEP in writing.

The permittee shall provide notification of the introduction of new pollutants in accordance with paragraph 2 above. The permittee may not authorize the introduction of new pollutants until the permittee receives DEP's written approval.

b. Increased Loading of Approved Pollutants (25 Pa. Code § 92a.24(a))

Approved pollutants are defined as parameters that meet one or more of the following criteria:

- (i) Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or
- (ii) Have been approved to be included in the permittee's influent waste stream by DEP in writing; or
- (iii) Have an effluent limitation or monitoring requirement in this permit.

The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the facility (as defined at 40 CFR 403.3), or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading of approved pollutants may not result in an exceedance of ELGs or effluent limitations and may not cause exceedances of the applicable water quality standards in the receiving stream.

3. Reporting Requirements for Hauled-In Wastes

a. Receipt of Residual Waste

- (i) The permittee shall document the receipt of all hauled-in residual wastes (including but not limited to wastewater from oil and gas wells, food processing waste, and landfill leachate), as defined at 25 Pa. Code § 287.1, that are received for processing at the treatment facility. The permittee shall report hauled-in residual wastes on a monthly basis to DEP on the "Hauled In Residual Wastes" Supplemental Report (3800-FM-BCW0450) as an attachment to the DMR. If no residual wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report. The information used to develop the Report shall be retained by the permittee for five years from the date of receipt and must be made available to DEP or EPA upon request.

- (1) The dates that residual wastes were received.
- (2) The volume (gallons) of wastes received.
- (3) The license plate number of the vehicle transporting the waste to the treatment facility.
- (4) The permit number(s) of the well(s) where residual wastes were generated, if applicable.
- (5) The name and address of the generator of the residual wastes.

- (6) The type of wastewater.

The transporter of residual waste must maintain these and other records as part of the daily operational record (25 Pa. Code § 299.219). If the transporter is unable to provide this information or the permittee has not otherwise received the information from the generator, the residual wastes shall not be accepted by the permittee until such time as the permittee receives such information from the transporter or generator.

- (ii) The following conditions apply to the characterization of residual wastes received by the permittee:
- (1) If the generator is required to complete a chemical analysis of residual wastes in accordance with 25 Pa. Code § 287.51, the permittee must receive and maintain on file a chemical analysis of the residual wastes it receives. The chemical analysis must conform to the Bureau of Waste Management's Form 26R except as noted in paragraph (2), below. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it.
 - (2) For wastewater generated from hydraulic fracturing operations ("frac wastewater") within the first 30 production days of a well site, the chemical analysis may be a general frac wastewater characterization approved by DEP. Thereafter, the chemical analysis must be waste-specific and be reported on the Form 26R.

b. Receipt of Municipal Waste

- (i) The permittee shall document the receipt of all hauled-in municipal wastes (including but not limited to septage and liquid sewage sludge), as defined at 25 Pa. Code § 271.1, that are received for processing at the treatment facility. The permittee shall report hauled-in municipal wastes on a monthly basis to DEP on the "Hauled In Municipal Wastes" Supplemental Report (3800-FM-BCW0437) as an attachment to the DMR. If no municipal wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report:

- (1) The dates that municipal wastes were received.
 - (2) The volume (gallons) of wastes received.
 - (3) The BOD₅ concentration (mg/l) and load (lbs) for the wastes received.
 - (4) The location(s) where wastes were disposed of within the treatment facility.
- (ii) Sampling and analysis of hauled-in municipal wastes must be completed to characterize the organic strength of the wastes, unless composite sampling of influent wastewater is performed at a location downstream of the point of entry for the wastes.

4. Unanticipated Noncompliance or Potential Pollution Reporting

- a. Immediate Reporting - The permittee shall immediately report any incident causing or threatening pollution in accordance with the requirements of 25 Pa. Code §§ 91.33 and 92a.41(b).
- (i) If, because of an accident, other activity or incident a toxic substance or another substance which would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, the permittee shall immediately notify DEP by telephone of the location and nature of the danger. Oral notification to the Department is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution.

- (ii) If reasonably possible to do so, the permittee shall immediately notify downstream users of the waters of the Commonwealth to which the substance was discharged. Such notice shall include the location and nature of the danger.
 - (iii) The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove the residual substances contained thereon or therein from the ground and from the affected waters of this Commonwealth to the extent required by applicable law.
- b. The permittee shall report any noncompliance which may endanger health or the environment in accordance with the requirements of 40 CFR 122.41(l)(6). These requirements include the following obligations:
- (i) 24 Hour Reporting - The permittee shall orally report any noncompliance with this permit which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported within 24 hours under this paragraph:
 - (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
 - (2) Any upset which exceeds any effluent limitation in the permit; and
 - (3) Violation of the maximum daily discharge limitation for any of the pollutants listed in the permit as being subject to the 24-hour reporting requirement. (40 CFR 122.44(g))
 - (ii) Written Report - A written submission shall also be provided within 5 days of the time the permittee becomes aware of any noncompliance which may endanger health or the environment. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - (iii) Waiver of Written Report - DEP may waive the written report on a case-by-case basis if the associated oral report has been received within 24 hours from the time the permittee becomes aware of the circumstances which may endanger health or the environment. Unless such a waiver is expressly granted by DEP, the permittee shall submit a written report in accordance with this paragraph. (40 CFR 122.41(l)(6)(iii))

5. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraph C.4 of this section or specific requirements of compliance schedules, at the time DMRs are submitted, on the Non-Compliance Reporting Form (3800-FM-BCW0440). The reports shall contain the information listed in paragraph C.4.b.(ii) of this section. (40 CFR 122.41(l)(7))

- D. Specific Toxic Pollutant Notification Levels (for Manufacturing, Commercial, Mining, and Silvicultural Direct Dischargers) - The permittee shall notify DEP as soon as it knows or has reason to believe the following: (40 CFR 122.42(a))
- 1. That any activity has occurred, or will occur, which would result in the discharge of any toxic pollutant which is not limited in this permit, if that discharge on a routine or frequent basis will exceed the highest of the following "notification levels": (40 CFR 122.42(a)(1))
 - a. One hundred micrograms per liter.
 - b. Two hundred micrograms per liter for acrolein and acrylonitrile.

- c. Five hundred micrograms per liter for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol.
 - d. One milligram per liter for antimony.
 - e. Five times the maximum concentration value reported for that pollutant in this permit application.
 - f. Any other notification level established by DEP.
2. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels": (40 CFR 122.42(a)(2))
- a. Five hundred micrograms per liter.
 - b. One milligram per liter for antimony.
 - c. Ten times the maximum concentration value reported for that pollutant in the permit application.
 - d. Any other notification level established by DEP.

PART B

I. MANAGEMENT REQUIREMENTS

A. Compliance

1. The permittee shall comply with all conditions of this permit. If a compliance schedule has been established in this permit, the permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit. (40 CFR 122.41(a)(1))
2. The permittee shall submit reports of compliance or noncompliance, or progress reports as applicable, for any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline. (25 Pa. Code § 92a.51(c), 40 CFR 122.47(a)(4))

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term in accordance with 25 Pa. Code § 92a.72 and 40 CFR 122.41(f).
2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. (40 CFR 122.41(f))
3. In the absence of DEP action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions. (40 CFR 122.41(a)(1))

C. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. (40 CFR 122.41(h))
2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this permit. (40 CFR 122.41(h))
3. Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to DEP, it shall promptly submit the correct and complete facts or information. (40 CFR 122.41(l)(8))

D. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit. (40 CFR 122.41(e))

E. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d))

F. Bypassing

1. Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions in paragraphs two, three and four of this section. (40 CFR 122.41(m)(2))
2. Other Bypassing - In all other situations, bypassing is prohibited and DEP may take enforcement action against the permittee for bypass unless:
 - a. A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage." (40 CFR 122.41(m)(4)(i)(A))
 - b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance. (40 CFR 122.41(m)(4)(i)(B))
 - c. The permittee submitted the necessary notice required in F.4.a. and b. below. (40 CFR 122.41(m)(4)(i)(C))
3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in F.2. above. (40 CFR 122.41(m)(4)(ii))
4. Notice
 - a. Anticipated Bypass – If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the bypass. (40 CFR 122.41(m)(3)(i))
 - b. Unanticipated Bypass – The permittee shall submit oral notice of any other unanticipated bypass within 24 hours, regardless of whether the bypass may endanger health or the environment or whether the bypass exceeds effluent limitations. The notice shall be in accordance with Part A III.C.4.b.

G. Termination of Permit Coverage (25 Pa. Code § 92a.74 and 40 CFR 122.64)

1. Notice of Termination (NOT) – If the permittee plans to cease operations or will otherwise no longer require coverage under this permit, the permittee shall submit DEP's NPDES Notice of Termination (NOT) for Permits Issued Under Chapter 92a (3800-BCW-0410), signed in accordance with Part A III.B.6 of this permit, at least 30 days prior to cessation of operations or the date by which coverage is no longer required.
2. Where the permittee plans to cease operations, NOTs must be accompanied with an operation closure plan that identifies how tankage and equipment will be decommissioned and how pollutants will be managed, as applicable.
3. The permittee shall submit the NOT to the DEP regional office with jurisdiction over the county in which the facility is located.

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality, who violates any provision of this permit; any rule, regulation or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

B. Falsifying Information

Any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or
- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or noncompliance)

Shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 Pa.C.S.A § 4904 and 40 CFR 122.41(j)(5) and (k)(2).

C. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (40 CFR 122.41(c))

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law, and Title 25 Pa. Code Chapter 92a and 40 CFR 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law:

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit; (40 CFR 122.41(i)(1))
2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit; (40 CFR 122.41(i)(2))
3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and (40 CFR 122.41(i)(3))
4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location. (40 CFR 122.41(i)(4))

B. Transfer of Permits

1. Transfers by modification. Except as provided in paragraph 2 of this section, a permit may be transferred by the permittee to a new owner or operator only if this permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (40 CFR 122.61(a))
2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:
 - a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b. of this section; (40 CFR 122.61(b)(1))
 - b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; (40 CFR 122.61(b)(2))
 - c. DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue this permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b. of this section; and (40 CFR 122.61(b)(3))
 - d. The new permittee is in compliance with existing DEP issued permits, regulations, orders and schedules of compliance, or has demonstrated that any noncompliance with the existing permits has been resolved by an appropriate compliance action or by the terms and conditions of the permit (including compliance schedules set forth in the permit), consistent with 25 Pa. Code § 92a.51 (relating to schedules of compliance) and other appropriate DEP regulations. (25 Pa. Code § 92a.71)
3. In the event DEP does not approve transfer of this permit, the new owner or operator must submit a new permit application.

C. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege. (40 CFR 122.41(g))

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit. (40 CFR 122.41(b))

E. Other Laws

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

IV. ANNUAL FEES

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. Annual fee amounts are specified in the following schedule and are due on each anniversary of the effective date of the most recent new or reissued permit. All flows identified in the schedule are annual average design flows. (25 Pa. Code § 92a. 62)

Minor IW Facility without ELG (Effluent Limitation Guideline)	\$500
Minor IW Facility with ELG	\$1,500
Major IW Facility < 250 MGD (million gallons per day)	\$5,000
Major IW Facility ≥ 250 MGD	\$25,000
IW Stormwater Individual Permit	\$1,000
CAAP (Concentrated Aquatic Animal Production Facility)	\$0

As of the effective date of this permit, the facility covered by the permit is classified in the following fee category:
Minor IW Facility without ELG.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Throughout a five year permit term, permittees will pay four annual fees followed by a permit renewal application fee in the last year of permit coverage. Permittees may contact DEP at 717-787-6744 with questions related to annual fees. The fees identified above are subject to change in accordance with 25 Pa. Code § 92a.62(e).

Payment for annual fees shall be remitted to DEP at the address below by the anniversary date. Checks should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Clean Water
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

PART C

I. OTHER REQUIREMENTS

- A. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance or replacement of all structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.
- B. Collected screenings, slurries, sludges, and other solids shall be handled, recycled and/or disposed of in compliance with the Solid Waste Management Act (35 P.S. §§ 6018.101 – 6018.1003), 25 Pa. Code Chapters 287, 288, 289, 291, 295, 297, and 299 (relating to requirements for landfilling, impoundments, land application, composting, processing, and storage of residual waste), Chapters 261a, 262a, 263a, and 270a (related to identification of hazardous waste, requirements for generators and transporters, and hazardous waste, requirements for generators and transporters, and hazardous waste permit programs), federal regulation 40 CFR Part 257, The Clean Streams Law, and the Federal Clean Water Act and its amendments. Screenings collected at intake structures shall be collected and managed and not be returned to the receiving waters.

The permittee is responsible to obtain or assure that contracted agents have all necessary permits and approvals for the handling, storage, transport and disposal of solid waste materials generated as a result of wastewater treatment.

- C. The terms and conditions of Water Quality Management (WQM) permits that may have been issued to the permittee relating to discharge requirements are superseded by this NPDES permit unless otherwise stated herein.
- D. If the applicable standard or effluent guideline limitation relating to the application for Best Available Technology (BAT) Economically Achievable or to Best Conventional Technology (BCT) is developed by DEP or EPA for this type of industry, and if such standard or limitation is more stringent than the corresponding limitations of this permit (or if it controls pollutants not covered by this permit), DEP may modify or revoke and reissue the permit to conform with that standard or limitation.
- E. The permittee shall optimize chlorine dosages used for disinfection or other purposes to minimize the concentration of Total Residual Chlorine (TRC) in the effluent, meet applicable effluent limitations, and reduce the possibility of adversely affecting the receiving waters. Optimization efforts may include an evaluation of wastewater characteristics, mixing characteristics, and contact times, adjustments to process controls, and maintenance of the disinfection facilities. If DEP determines that effluent TRC is causing adverse water quality impacts, DEP may reopen this permit to apply new or more stringent effluent limitations and/or require implementation of control measures or operational practices to eliminate such impacts.

Where the permittee does not use chlorine for primary or backup disinfection, but proposes the use of chlorine for cleaning or other purposes, the permittee shall notify DEP prior to initiating use of chlorine and monitor TRC concentrations in the effluent on each day in which chlorine is used. The results shall be submitted as an attachment to the DMR.

- F. If, in the opinion of the Department, these works are not so operated or if by reason of change in the character of wastes or increased load upon the works, or changed use or condition of the receiving body of water, or otherwise, the said effluent ceases to be satisfactory or the sewerage facilities shall have created public nuisance, then upon notice by the Department, the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the said receiving body of water.

- G. The permittee shall submit written notification to the DEP at least three weeks prior to the start of the periodic sludge drying bed cleaning operations. The permittee shall maintain onsite records of available sludge drying bed capacity.
- H. The attention of the permittee is directed to the fact that effluent is discharged to a location with little or no assimilative capacity or dilution during critical periods. If the effluent creates a health hazard or nuisance, the permittee shall, upon notice from DEP, provide such additional treatment as may be required by DEP.

II. SCHEDULE OF COMPLIANCE (Total Residual Chlorine)

- A. The permittee shall achieve compliance with final effluent limitations or terminate this discharge in accordance with the following schedule:
- | | |
|---|--|
| 1. Feasibility study completion | <u>June 30, 2022</u> |
| 2. Final plan completion | <u>June 30, 2023</u> |
| 3. Start construction | <u>December 31, 2023</u> |
| 4. Construction progress report(s) | <u>Quarterly after construction starts</u> |
| 5. End construction | <u>June 30, 2024</u> |
| 6. Compliance with effluent limitations | <u>September 1, 2024</u> |
- B. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to DEP a written notice of compliance or non-compliance with the specific schedule requirement. Each notice of non-compliance shall include the following information:
1. A short description of the non-compliance.
 2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirement.
 3. A description of any factors which tend to explain or mitigate the non-compliance.
 4. An estimate of the date that compliance with the elapsed schedule requirement will be achieved and an assessment of the probability that the next scheduled requirement will be met on time.

III. WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC POLLUTANTS

- A. Final Water Quality Based Effluent Limitations (WQBELs)

The final WQBELs listed below will become effective on September 1, 2024 ("WQBEL Effective Date") unless DEP issues an amendment to this permit prior to that date:

Outfall No.	Pollutant	Average Monthly (ug/L)	Maximum Daily (ug/L)	IMAX (ug/L)
001	Aluminum, Total	750	927	927
001	Cadmium, Total	0.10*	0.16*	0.25
001	Copper, Total	2.87*	3.73*	3.73*

Outfall No.	Pollutant	Average Monthly (ug/L)	Maximum Daily (ug/L)	IMAX (ug/L)
001	Lead, Total	0.49*	0.76*	1.22
001	Iron, Total	1883	2938	4708
001	Acrylamide	0.28	0.43	0.69

*See Part C.IV (WQBELs below Quantitation Limits)

These limits are necessary to achieve water quality standards in the receiving waters. The permittee has not demonstrated the ability to achieve these limits as of the effective date of the permit. Prior to the WQBEL Effective Date, the permittee shall complete studies as described below.

B. Site-Specific Data Collection Studies

The WQBELs were developed by DEP using the default or model-derived estimates for the parameters listed below in DEP's Toxics Management Spreadsheet (TMS). The permittee shall collect site-specific data for all of the parameters listed below and submit the data to DEP as part of a Final WQBEL Compliance Report.

- Discharge pollutant concentration coefficients of variability** using DEP's *Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics* (391-2000-024).
- Discharge and background Total Hardness concentrations** using DEP's *Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness* (391-2000-021).
- Background / ambient pollutant concentrations** using DEP's *Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances* (391-2000-022).
- Chemical translator(s)** using EPA's *The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit From A Dissolved Criterion* (EPA 823-B-96-007) or other EPA guidance.
- The slope and width of the receiving waters** for the reach of stream modeled by DEP using the TMS as measured in the field.
- The velocity of the receiving waters** for the reach of stream modeled by DEP using the TMS as measured through a time of travel study that provides an estimate of velocity under design stream flow conditions.
- The acute and chronic partial mix factors** for the reach of stream modeled by DEP using the TMS as determined through a mixing study that provides an estimate of mixing under design stream flow conditions.

The permittee may, at its discretion, submit a work plan to DEP for review and comment prior to initiating the site-specific data collection studies. If the permittee decides to submit a work plan, DEP's approval is not necessary prior to commencing the studies.

C. Toxics Reduction Evaluation (TRE)

The permittee shall conduct a TRE in accordance with DEP's *Water Quality Toxics Management Strategy, Appendix C, Permittee Guidance for Conducting a Toxics Reduction Evaluation (TRE)* (361-0100-003). The permittee shall investigate and address the following as part of the TRE:

1. The source(s) of the toxic pollutants in the effluent through a comprehensive review of influent and effluent quality and contributors to the facility, if applicable.
2. An evaluation of approaches and strategies that exist to reduce or eliminate sources in order to achieve the final WQBELs.
3. An evaluation of approaches and strategies that exist to provide treatment to achieve the final WQBELs.
4. An analysis of the feasibility of the approaches and strategies identified in paragraphs 2 and 3, above.

The permittee shall develop a TRE work plan and submit the work plan to DEP for review and comment when requested by DEP. DEP's approval of the work plan is not necessary prior to commencing the TRE.

D. Schedule and Final WQBEL Compliance Report

1. The permittee shall submit complete required studies and a Final WQBEL Compliance Report to DEP in accordance with the following schedule:

Action	Due Date
Complete TRE Work Plan and Submit Work Plan if Requested by DEP	March 31, 2022
Complete TRE and Site-Specific Data Collection	March 31, 2023
Begin Implementing Actions Identified in the TRE to Reduce Pollutant Load (if applicable)	June 30, 2023
Submit Final WQBEL Compliance Report	September 30, 2023
Complete Actions Identified in TRE and Comply with Final Permit Limit	September 1, 2024

2. The Final WQBEL Compliance Report shall consist of the following components:
 - a. Site-specific data collected in accordance with paragraph B, above.
 - b. If the permittee is requesting a modification to the final WQBELs based on the site-specific data, the permittee shall submit:
 - (1) Printouts of the TMS using the site-specific data along with all other assumptions and data used by DEP to establish the final WQBELs; and
 - (2) An application (3800-PM-BCW0027b) to DEP for a Major Amendment to the permit.
 - c. A TRE Report including a feasibility analysis or study, if applicable.
 - d. An assessment of whether the permittee will be capable of achieving the final WQBELs on the WQBEL Effective Date. The permittee shall notify DEP of one of the following conclusions:
 - (1) The permittee will achieve the final WQBELs on the WQBEL Effective Date. The permittee shall notify DEP of the measures that will be taken to comply.
 - (2) The permittee will or may be able to achieve the final WQBELs, but after the WQBEL Effective Date. The permittee shall notify DEP of its proposed alternative WQBEL Effective Date and include justification for the alternative date.
 - (3) The permittee will not be able to achieve the final WQBELs because all alternatives to control the toxic pollutant(s) are infeasible.

- e. An application (3800-PM-BCW0027b) for a Major Amendment to the permit if the permittee concludes that it is not capable of achieving the final WQBELs on the WQBEL Effective Date or compliance is infeasible, or if the permittee believes the final WQBELs should be modified based on site-specific data.
3. In response to the receipt of the Final WQBEL Compliance Report, DEP may:
 - a. Request additional research, studies or clarification if the permittee concludes that it cannot achieve final WQBELs by the WQBEL Effective Date or compliance is infeasible and DEP disagrees with this conclusion or believes that additional efforts are necessary before reaching this conclusion. The permittee shall comply with the schedule provided by DEP in writing for such additional efforts or an alternative agreed upon schedule.
 - b. Issue a draft Major Amendment to the permit that modifies the WQBELs in response to site-specific data or modifies the WQBEL Effective Date, for public comment.
 - c. Deny the application for a Major Amendment to the permit or place review of the application on hold until additional research or studies requested by DEP are complete.
 - d. Notify the permittee that DEP will consider a time extension to achieve the final WQBELs under 25 Pa. Code § 95.4 for the discharge upon the receipt of a request submitted by the permittee using Form No. 3800-FM-BCW0302, if it can be demonstrated that the criteria for a time extension under § 95.4 are met.
 - e. Notify the permittee that DEP will consider the submission of a site-specific criterion study (SSCS) to further modify WQBELs, where applicable. The permittee shall comply with the requirements set forth in DEP's notification letter for completion of a SSCS, including submission of a SSCS work plan.

IV. WQBELs BELOW QUANTITATION LIMITS

- A. The parameter(s) listed below are subject to water quality-based effluent limits (WQBELs) in Part A of this permit that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the QL(s) as listed below. For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

<u>Parameter Name</u>	<u>Quantitation Limit</u>
Cadmium, Total	0.2 ug/l
Copper, Total	4.0 ug/l
Lead, Total	1.0 ug/l

- B. The permittee shall, where determined to be feasible by the permittee, achieve a QL less than the QL identified above to improve the level of confidence that state water quality standards are being met in the receiving waters.
- C. The permittee shall manage non-detect values and report statistical results to DEP in accordance with published DMR guidance (3800-BK-DEP3047 and 3800-FS-DEP4262). Where a mixed data set exists containing non-detect results and "detected" values (i.e., results greater than or equal to the QL), the QL shall be used for non-detect results to compute average statistical results.

V. CHEMICAL ADDITIVES**A. Approved Chemical Additives List**

1. The permittee is authorized to use chemical additives that are published on DEP's Approved Chemical Additives List (Approved List) (see www.dep.pa.gov/chemicaladditives) subject to paragraphs A.2 and A.3, below.
2. The permittee may not discharge a chemical additive at a concentration that is greater than the water quality-based effluent limitation (WQBEL) for the chemical additive or, if applicable, a technology-based effluent limitation. If effluent limitations are not specified in Part A of this permit for the chemical additive, the permittee is responsible for determining the WQBEL and ensuring the WQBEL is not exceeded by restricting usage to an amount that will not cause an excursion above in-stream water quality standards.
3. If the permittee decides to use a chemical additive that is on DEP's Approved List and the use would either (1) constitute an increase in the usage rate specified in the NPDES permit application or previous notification to DEP or (2) constitute a new use, not identified in the NPDES permit application or otherwise no previous notification occurred, the permittee shall complete and submit the "Chemical Additives Notification Form" (3800-FM-BCW0487) to the DEP regional office that issued the permit. The permittee may proceed to use the chemical additive as reported on the Form upon receipt by the DEP regional office.

B. New Chemical Additives, Not on Approved Chemical Additives List

1. In the event the permittee wishes to use a chemical additive that is not listed on DEP's Approved List, the permittee shall submit the "New Chemical Additives Request Form" (3800-FM-BCW0486) to DEP's Central Office, Bureau of Clean Water (BCW), NPDES Permitting Division, Rachel Carson State Office Building, PO Box 8774, Harrisburg, PA 17105-8774, prior to use. A copy shall be submitted to the DEP regional office that issued the permit. The form must be completed in whole in order for BCW to approve the chemical additive, and a Material Safety Data Sheet (MSDS) that meets the minimum requirements of 29 CFR 1910.1200(g) must be attached.
2. Following placement of the chemical additive on the Approved List, the permittee may submit the Chemical Additive Notification Form in accordance with paragraph A.3, above, to notify DEP of the intent to use the approved chemical additive. The permittee may proceed with usage when the new chemical has been identified on DEP's Approved List and following DEP's receipt of the Chemical Additives Notification Form.
3. The permittee shall restrict usage of chemical additives to the maximum usage rates determined and reported to DEP on Chemical Additives Notification Forms.

C. Chemical Additives Usage Reporting Requirements

The "Chemical Additives Usage Form" (3800-FM-BCW0439) shall be used to report the usage of chemical additives and shall be submitted as an attachment to the Discharge Monitoring Report (DMR) at the time the DMR is submitted.

- D. DEP may amend this permit to include WQBELs or otherwise control usage rates of chemical additives if there is evidence that usage is adversely affecting receiving waters, producing Whole Effluent Toxicity test failures, or is causing excursions of in-stream water quality standards.

Application Type Renewal
Facility Type Industrial
Major / Minor Minor

**NPDES PERMIT FACT SHEET
ADDENDUM**

Application No. PA0062758
APS ID 610656
Authorization ID 1217421

Applicant and Facility Information

Applicant Name	<u>Shenandoah Borough Municipal Authority Schuylkill County</u>	Facility Name	<u>Shenandoah WTP</u>
Applicant Address	<u>PO Box 110 Route 4032 Shenandoah, PA 17976-0110</u>	Facility Address	<u>424 Raven Run Road Shenandoah, PA 17946</u>
Applicant Contact	<u>Jennifer Hepler</u>	Facility Contact	<u>Daniel Salvatore</u>
Applicant Phone	<u>(570) 462-1904</u>	Facility Phone	<u>(570) 462-4918</u>
Client ID	<u>94922</u>	Site ID	<u>588704</u>
SIC Code	<u>4941</u>	Municipality	<u>West Mahanoy Township</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Schuylkill</u>
Date Published in PA Bulletin	<u>July 16, 2021</u>	EPA Waived?	<u>Yes</u>
Comment Period End Date	<u>August 16, 2021</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Application for a renewal of an NPDES permit for discharge of treated Industrial</u>		

Internal Review and Recommendations

This is the NPDES Permit Renewal for the 0.220 MGE Water Treatment Plant discharge. **NOTE:** This permittee is a different client/entity than the Shenandoah STP's permittee. The (separate) Shenandoah Muni Sew Auth Schuylkill Cnty (Client No. 39486; different DCED authority code# than the Shenandoah Borough Municipal Authority) operates a separate STP (NPDES Permit No. PA0070386; Site# 240446; with CSOs) that discharges directly to Shenandoah Creek (upstream of the mining-disturbed Lost Creek confluence).

Public Comments: None received as of August 18, 2021.

Compliance History:

Permit: PA0062758
Client ID: 94922
Client: All

Open Violations: 0

No data was found using the criteria entered. Please revise your choices and try again

Approve	Return	Deny	Signatures	Date
X			James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	August 18, 2021
X			Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	8-19-21
X			B R Patel (Signed) Bharat Patel, P.E. / Environmental Program Manager	08/19/2021

3800-FM-BCW0462 12/2016
COMMONWEALTH OF PENNSYLVANIA



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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

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ADDRESS PO Box 110
Shenandoah, PA 17976-0110
FACILITY Shenandoah WTP
LOCATION 424 Raven Run Road
West Mahanoy Township
Schuylkill County
WATERSHED 6-B

PA0062758
PERMIT NUMBER

001
OUTFALL NUMBER

MONITORING PERIOD						
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Interim
Reporting Frequency: Monthly
DMR Effective From: September 1, 2021
DMR Effective To: August 31, 2024
Permit Expires: August 31, 2026
Permit Application Due: March 4, 2026

Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Residual Chlorine (TRC)	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	XXX	XXX	XXX	XXX	0.50 Avg Mo	1.00 IMAX	mg/L		1/week	Grab
Aluminum, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	4.27 Avg Mo	Report Daily Max	lbs/day	XXX	4.000 Avg Mo	8.000 Daily Max	mg/L		1/week	24-Hr Composite
Cadmium, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		1/week	24-Hr Composite
Copper, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		1/week	24-Hr Composite
Iron, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	2.14 Avg Mo	Report Daily Max	lbs/day	XXX	2.000 Avg Mo	4.000 Daily Max	mg/L		1/week	24-Hr Composite
Lead, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		1/week	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	TELEPHONE		DATE		
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO

COMMENTS (Report all violations on the "Non-Compliance Reporting Form")

3800-FM-BCW0462 12/2016
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PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Acrylamide	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		1/month	24-Hr Composite

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COMMENTS (Report all violations on the "Non-Compliance Reporting Form")								

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		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Residual Chlorine (TRC)	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	XXX	XXX	XXX	XXX	0.05 Avg Mo	0.17 IMAX	mg/L		1/day	Grab
Aluminum, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	1.38 Avg Mo	Report Daily Max	lbs/day	XXX	0.750 Avg Mo	0.927 Daily Max	mg/L		1/week	24-Hr Composite
Cadmium, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	0.0001 Avg Mo	0.0003 Daily Max	lbs/day	XXX	0.10* Avg Mo	0.16* Daily Max	ug/L		1/week	24-Hr Composite
Copper, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	0.005 Avg Mo	0.007 Daily Max	lbs/day	XXX	2.87* Avg Mo	3.73* Daily Max	ug/L		1/week	24-Hr Composite
Iron, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	2.14 Avg Mo	Report Daily Max	lbs/day	XXX	1.883 Avg Mo	2.938 Daily Max	mg/L		1/week	24-Hr Composite

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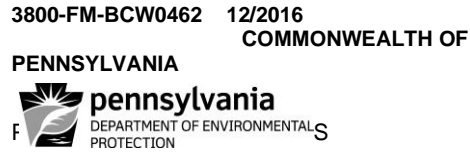
Check Here if No Discharge

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		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Lead, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	0.0009 Avg Mo	0.0010 Daily Max	lbs/day	XXX	0.49* Avg Mo	0.076* Daily Max	ug/L		1/week	24-Hr Composite
Acrylamide	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	0.0005 Avg Mo	0.0008 Daily Max	lbs/day	XXX	0.28 Avg Mo	0.43 Daily Max	ug/L		1/month	24-Hr Composite

*See Part C.IV (WQBELs below quantitation limits).

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		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	MGD	XXX	XXX	XXX	XXX		Continuous	Recorded
pH	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	XXX	XXX	XXX	6.0 Inst Min	XXX	9.0 IMAX	S.U.		1/day	Grab
Total Suspended Solids	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	XXX	lbs/day	XXX	30.0 Avg Mo	Report Daily Max	mg/L		1/week	24-Hr Composite
Manganese, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	1.07 Avg Mo	Report Daily Max	lbs/day	XXX	1.000 Avg Mo	2.000 Daily Max	mg/L		1/week	24-Hr Composite
Nickel, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		1/month	24-Hr Composite

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3800-FM-BCW0462 12/2016
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Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Selenium, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		1/month	24-Hr Composite
Zinc, Total	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		1/month	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	TELEPHONE		DATE		
		AREA CODE	NUMBER	YEAR	MO	DAY
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	COMMENTS (Report all violations on the "Non-Compliance Reporting Form")				

3800-FM-BCW0462 12/2016
COMMONWEALTH OF PENNSYLVANIA



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME Shenandoah Borough Municipal Authority Schuylkill County
ADDRESS PO Box 110
Shenandoah, PA 17976-0110
FACILITY Shenandoah WTP
LOCATION 424 Raven Run Road
West Mahanoy Township
Schuylkill County
WATERSHED 6-B

PA0062758
PERMIT NUMBER

101
OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: September 1, 2021
DMR Effective To: August 31, 2026
Permit Expires: August 31, 2026
Permit Application Due: March 4, 2026

Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	MGD	XXX	XXX	XXX	XXX		Upon Request	Measured
Aluminum, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		Upon Request	24-Hr Composite
Cadmium, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		Upon Request	24-Hr Composite
Copper, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		Upon Request	24-Hr Composite
Iron, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		Upon Request	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	TELEPHONE		DATE		
		AREA CODE	NUMBER	YEAR	MO	DAY
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	COMMENTS (Report all violations on the "Non-Compliance Reporting Form")				

3800-FM-BCW0462 12/2016
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NAME Shenandoah Borough Municipal Authority Schuylkill County
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WATERSHED 6-B

PA0062758
PERMIT NUMBER

101
OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: September 1, 2021
DMR Effective To: August 31, 2026
Permit Expires: August 31, 2026
Permit Application Due: March 4, 2026

Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Lead, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		Upon Request	24-Hr Composite
Manganese, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	mg/L		Upon Request	24-Hr Composite
Nickel, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		Upon Request	24-Hr Composite
Selenium, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		Upon Request	24-Hr Composite
Zinc, Total Intake	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	lbs/day	XXX	Report Avg Mo	Report Daily Max	ug/L		Upon Request	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	TELEPHONE		DATE		
		AREA CODE	NUMBER	YEAR	MO	DAY
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	COMMENTS (Report all violations on the "Non-Compliance Reporting Form")				

3800-FM-BCW0462 12/2016
COMMONWEALTH OF

PENNSYLVANIA



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).		TELEPHONE		DATE		
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY
COMMENTS (<i>Report all violations on the "Non-Compliance Reporting Form"</i>)							



INSTRUCTIONS FOR COMPLETING DISCHARGE MONITORING REPORTS (DMRs)

General

One or more Discharge Monitoring Reports (DMRs) are attached to your permit for reporting the results of self-monitoring activities as required by your permit. If required by your permit, you must use Department of Environmental Protection's (DEP's) [electronic DMR \(eDMR\) system](#) to submit results. If you are required to use eDMR, these physical forms should only be used under the following circumstances:

1. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.
2. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).

You should make copies of the DMRs for your ongoing use, unless you participate in the eDMR program.

- Reporting frequencies will vary depending on the monitoring frequencies listed in your permit, and are generally monthly, quarterly, semi-annually and annually.
- Your reports must be received by DEP on the 28th day of the month following the end of the reporting period, unless otherwise specified in Part C of your permit.
- Your permit may require submission of DMRs to other agencies, including the U.S. Environmental Protection Agency (EPA).
- DMRs will generally include pre-populated information for permittee name and address, facility location, permit number, outfall number, permit expiration date, parameter names, and permit requirements. If you identify any errors on a DMR issued by DEP, please contact the DEP regional office that issued your permit. **DO NOT make changes to DMRs issued to you.**
- You may use computer-generated replicas of Form No. 3800-FM-BCW0462 if you receive prior approval from DEP. **DEP reserves the right to instruct you to discontinue the submission of computer-generated DMRs if the permit requirements you entered on the form are inaccurate.**

Instructions

1. Enter statistical results into each blank field below the "VALUE" column headers. Results must be reported in the same units shown on the DMR.
2. Sum the total number of excursions or exceedances of permit limits across the row for each parameter and enter the value into the "NO. EX" field. For example, if the permit contains limits of 6.0 S.U. (Minimum) and 9.0 S.U. (Maximum) for pH, and the Minimum and Maximum results are 5.9 S.U. and 9.1 S.U., respectively, enter "2" into the "NO. EX" field.
3. Report the actual sampling frequency and sample type utilized during the reporting period in the fields corresponding to "Frequency of Analysis" and "Sample Type", respectively.
4. Type the name of the principal executive officer (or an authorized agent designated by a principal executive officer) who is taking responsibility for the report, sign the report (should be in ink), enter the telephone number of the responsible individual, and record the date that the report was signed. Mail only original, signed copies of DMRs.

General

One or more Discharge Monitoring Reports (DMRs) are attached to your permit for reporting the results of self-monitoring activities as required by your permit. If required by your permit, you must use Department of Environmental Protection's (DEP's) [electronic DMR \(eDMR\) system](#) to submit results. If you are required to use eDMR, these physical forms should only be used under the following circumstances:

3. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.
4. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).

You should make copies of the DMRs for your ongoing use, unless you participate in the eDMR program.

- Reporting frequencies will vary depending on the monitoring frequencies listed in your permit, and are generally monthly, quarterly, semi-annually and annually.
- Your reports must be received by DEP on the 28th day of the month following the end of the reporting period, unless otherwise specified in Part C of your permit.
- Your permit may require submission of DMRs to other agencies, including the U.S. Environmental Protection Agency (EPA).
- DMRs will generally include pre-populated information for permittee name and address, facility location, permit number, outfall number, permit expiration date, parameter names, and permit requirements. If you identify any errors on a DMR issued by DEP, please contact the DEP regional office that issued your permit. **DO NOT make changes to DMRs issued to you.**
- You may use computer-generated replicas of Form No. 3800-FM-BCW0462 if you receive prior approval from DEP. **DEP reserves the right to instruct you to discontinue the submission of computer-generated DMRs if the permit requirements you entered on the form are inaccurate.**

Instructions

1. Enter statistical results into each blank field below the "VALUE" column headers. Results must be reported in the same units shown on the DMR.
2. Sum the total number of excursions or exceedances of permit limits across the row for each parameter and enter the value into the "NO. EX" field. For example, if the permit contains limits of 6.0 S.U. (Minimum) and 9.0 S.U. (Maximum) for pH, and the Minimum and Maximum results are 5.9 S.U. and 9.1 S.U., respectively, enter "2" into the "NO. EX" field.
3. Report the actual sampling frequency and sample type utilized during the reporting period in the fields corresponding to "Frequency of Analysis" and "Sample Type", respectively.
4. Type the name of the principal executive officer (or an authorized agent designated by a principal executive officer) who is taking responsibility for the report, sign the report (should be in ink), enter the telephone number of the responsible individual, and record the date that the report was signed. Mail only original, signed copies of DMRs.

Geometric Mean – Report the average of a set of n sample results given by the n th root of their product. If any result is zero (0), substitute 1 for the calculation. For example, five samples were analyzed with the following results: 20, 300, 400, 500, and 0. The calculation of geometric mean is as follows (note that you will need to use the power function on a calculator):

$$\sqrt[5]{20 \cdot 300 \cdot 400 \cdot 500 \cdot 1} = \sqrt[5]{1,200,000,000} = (1,200,000,000)^{1/5} = 65$$

Non-Detect Data

Conventional and Toxic Parameters

For calculating average values of data sets in which there are some “detections” (results at or above the laboratory quantitation limit) and some “non-detect” data (results reported below the laboratory quantitation limit), use the value of the quantitation limit for non-detect data. In other words, ignore the less than (<) symbol for statistical calculations and include the < symbol with the statistical result if there is at least one non-detect result in the data set. For example, four samples were analyzed with the following results: < 1.0, 2.0, < 1.0, and 1.0. The average statistical result is < 1.3.

Estimated values (i.e., values flagged with a “J” qualifier) should not be used for compliance purposes.

Bacteria Parameters

Report all “non-detect” (e.g., < 2) and “too numerous to count” (TNTC) (e.g., > 2,000) results on DMR supplemental forms as reported by the laboratory. Do not report “TNTC” on supplemental forms, but instead report a value qualified with the “>” symbol. Where a data set includes one or more “non-detect” and/or TNTC results, calculate the geometric mean by ignoring qualifying symbols, but report the value with the symbol. If a data set includes both “>” and “<” qualifiers, the “>” qualifier takes precedence for reporting. For all “non-detect” values, specify in the Comments section of the DMR the maximum volume filtered at the laboratory. Note that DEP considers a DMR with reported values qualified by the “>” symbol for bacteria parameters to be a non-compliance.

Example 1 – For results are determined, < 2, 10, 20, and 30. The geometric mean should be reported as < $(2 \cdot 10 \cdot 20 \cdot 30)^{0.25} = < 10$. Specify the maximum volume filtered for the < 2 result in the DMR Comments.

Example 2 – Three results are determined, < 2, 1,000, and > 2,000. The geometric mean should be reported as > $(2 \cdot 1,000 \cdot 2,000)^{0.333} = > 158$.

Rounding and Precision

Statistical values reported on the DMR should be rounded to the same number of decimal places as the limit for the parameter as set forth in the permit. If the permit does not contain a limit but requests monitoring only, statistical values for concentration results should be rounded to the maximum number of decimal places in the data set as reported by the laboratory or the instrument used for analysis. If mass loads must be reported and there is no limit, round statistical values to the nearest whole number, unless the calculated number is less than one, in which case the value should be rounded to one significant figure (e.g., 0.1, 0.05, etc.). If the number you are rounding is followed by 5, 6, 7, 8, or 9, round the number up, otherwise round down.

DEP’s “Discharge Monitoring Reports: A Guide to Electronic and Paper DMR Reporting” (3800-BK-DEP3047) publication contains more information and are incorporated by reference. This document is available on DEP’s website.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

**SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING**

Facility Name: Shenandoah WTP
Municipality: West Mahanoy Township County: Schuylkill
Watershed: 6-B
Laboratories: _____

Month: _____ Year: _____
NPDES Permit No.: PA0062758 Outfall No.: 001
Renewal application due **180 days** prior to expiration
This permit will expire on AUGUST 31, 2026

Day	Effluent Parameters																	
	Flow		pH		TRC		TSS		Total Aluminum		Total Cadmium		Total Copper		Total Copper		Total Iron	
	Q	MGD	Q	S.U.	Q	mg/L	Q	mg/L	Q	mg/L	Q	µg/L	Q	mg/L	Q	µg/L	Q	mg/L
1																		
2																		
3																		
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26																		
27																		
28																		
29																		
30																		
31																		
Avg																		

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____
Title: _____

Signature: _____
Date: _____

Facility Name: Shenandoah WTP
 Municipality: West Mahanoy Township County: Schuylkill
 Watershed: 6-B
 Laboratories: _____

Month: _____ Year: _____
 NPDES Permit No.: PA0062758 Outfall No.: 001
 Renewal application due **180 days** prior to expiration
 This permit will expire on AUGUST 31, 2026

Effluent Parameters																	
Day	Total Lead		Total Manganese		Total Nickel		Total Selenium		Total Zinc		Acrylamide		Acrylamide		Q	Q	
	Q	mg/L	Q	mg/L	Q	µg/L	Q	µg/L	Q	µg/L	Q	mg/L	Q	µg/L			
1																	
2																	
3																	
4																	
5																	
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28																	
29																	
30																	
31																	
Avg																	

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Prepared By: _____
 Title: _____

Signature: _____
 Date: _____



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SUPPLEMENTAL REPORT – CHEMICAL ADDITIVES USAGE

Facility Name: Shenandoah WTP
Municipality: West Mahanoy Township County: Schuylkill
Watershed: 6-B

Month: _____ Year: _____
NPDES Permit No.: PA0062758 Outfall No.: _____
Renewal application due **180 days** prior to expiration
This permit will expire on AUGUST 31, 2026

Chemical Names																
Day	gallons	lbs	gallons	lbs	gallons	lbs	gallons	lbs	gallons	lbs	gallons	lbs	gallons	lbs	gallons	lbs
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
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22																
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24																
25																
26																
27																
28																
29																
30																
31																
Average																
Maximum																

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Prepared By: _____

Signature: _____

Title: _____

Date: _____

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Shenandoah WTP
 Municipality: West Mahanoy Township County: Schuylkill

Month: _____ Year: _____
 Permit No.: PA0062758

Violations of Permit Effluent Limitations*

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

Sanitary Sewer Overflows and Other Unauthorized Discharges*

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified

Other Permit Violations*

- Sample collection less frequent than required Explain _____
- Sample type not in compliance with permit Explain _____
- Violation of permit schedule Explain _____
- Other Explain _____
- Other Explain _____

*** If the space provided is not sufficient to record all information, please attach additional sheets.**

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Prepared By: _____
 Title: _____

Signature: _____
 Date: _____

Supplemental Form Inventory

The following supplemental forms (indicated in the check box column) are attached to this permit and must be completed and submitted to DEP in accordance with the permit and the supplemental form instructions. If the eDMR system is used to submit DMR reports, the spreadsheet versions of these supplemental forms, where applicable, should be used and attached to the eDMR submissions. A link to DEP's supplemental form website is available when logging into the eDMR system.

Check Box	Supplemental Form Name and No.
<input checked="" type="checkbox"/>	Daily Effluent Monitoring (3800-FM-BCW0435)
<input type="checkbox"/>	Influent & Process Control (3800-FM-BCW0436)
<input type="checkbox"/>	Hauled in Municipal Wastes (3800-FM-BCW0437)
<input type="checkbox"/>	Sewage Sludge/Biosolids Production and Disposal (3800-FM-BCW0438)
<input checked="" type="checkbox"/>	Chemical Additives Usage (3800-FM-BCW0439) <u>if used.</u>
<input checked="" type="checkbox"/>	Non-Compliance Reporting Form (3800-FM-BCW0440)
<input type="checkbox"/>	CSO Monthly Summary Report (3800-FM-BCW0441)
<input type="checkbox"/>	CSO Detailed Report (3800-FM-BCW0442)
<input type="checkbox"/>	Groundwater Monitoring Data Report (3800-FM-BCW0443)
<input type="checkbox"/>	TMDL Annual Load Summary (3800-FM-BCW0448)
<input type="checkbox"/>	Land Application Systems (3800-FM-BCW0449)
<input type="checkbox"/>	Hauled in Residual Wastes (3800-FM-BCW0450)
<input checked="" type="checkbox"/>	Surface Water Monitoring Data Report (3800-FM-BCW0461) <u>in event surface water is sampled during Part C.III WQBELs for Toxics process</u>
<input checked="" type="checkbox"/>	Lab Accreditation Form (3800-FM-BCW0189)
<input type="checkbox"/>	Whole Effluent Toxicity Test Summary Report (3800-FM-BCW0485)
<input type="checkbox"/>	Cooling Water Intake Monitoring (3800-FM-BCW0010)
<input type="checkbox"/>	Storm Water Annual Report
<input type="checkbox"/>	Other:

**INSTRUCTIONS FOR COMPLETING
DMR SUPPLEMENTAL REPORTS****DAILY EFFLUENT MONITORING REPORT**

Use this form to report daily monitoring results for the parameters that must be monitored in effluent for compliance with the permit. Results for influent parameters are normally reported on Form 3800-FM-BCW0436.

1. Enter Facility Name, Municipality, County, Watershed No., Laboratories, Month, Year, NPDES Permit No., Outfall No., and Permit Expiration Date (it is noted that this information may be pre-populated if you have received this form with your permit). For Laboratories, list the names of all laboratories where samples were analyzed during the month, including on-site analysis.
2. In the column headers, below "Effluent Parameters," enter the names of parameters in the permit. Since limited space is provided, abbreviation may be necessary. If there are more parameters for an outfall than columns provided on the form, attach an additional sheet.
3. Below parameter names, and to the right of "Q" (Qualifier) column headers, enter the units associated each parameter (it is noted that this information may be pre-populated if you have received this form with your permit).
4. Enter monitoring results for parameters in the rows corresponding to the day of the month in which samples were collected. Enter results exactly as reported by the laboratory, or if measured with on-site equipment, to the level of precision recommended by the equipment manufacturer. Enter data qualifiers such as "<," ">," "J," and others in the "Q" column.
5. Calculate and report average values at the bottom of the table in accordance with the DMR Instructions (3800-FM-BCW0463) and DEP guidance (3800-BK-DEP3047). Note – for bacteria, calculate and report the geometric mean value.
6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

CHEMICAL ADDITIVES USAGE

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., Outfall No. and Permit Expiration Date. A separate sheet is required for each outfall that receives chemical additives.
2. In the spaces below the Chemical Names header in the table, enter the chemical additives used at the facility. If more than eight additives are used per Outfall, add more sheets.
3. Enter the daily usage rates for each chemical. Enter additives introduced in liquid form in the "gallons" column and additives in solid form (or if you have calculated the mass equivalent of liquid additives) under the "lbs" column.
4. Calculate the average and maximum usage rates for each chemical at the bottom of the table.
5. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). If you are reporting other non-compliance events, and the deadline for a written report (e.g., 5 days) does not coincide with your submission of the DMR, this form should be submitted separately to the Department by the reporting deadline set forth in the permit.

INSTRUCTIONS FOR COMPLETING DMR SUPPLEMENTAL REPORTS

If you are unsure of whether an incident constitutes non-compliance that may endanger health or the environment, it is recommended that you notify the Department verbally as soon as possible after you become aware of the incident. Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.

Instructions:

1. Enter the name of the facility, the municipality and county where it is located, the month and year when violations occurred, and the NPDES or WQM permit number for the facility.
2. If there were violations of permit effluent limitations during the month, check the box next to "Violations of Permit Effluent Limitations." (Note – if using the electronic version of this form, check the boxes first, and then select Tools – Unprotect Document to enter additional information). Enter the date of the violation (if a violation of a minimum or maximum limit, the date of sample collection, or if a violation of an average limit, the end of the monitoring period), the parameter name, the permit limit and units, the statistical code (e.g., "MIN", "MAX", "MO AVG", etc.), the measured result and units, the cause of the violation and the corrective action taken. **If there are more than two violations during the monitoring period and/or if the space provided is insufficient to explain the cause or corrective action, please attach additional pages.**
3. If there are Sanitary Sewer Overflow (SSO) discharges or other unauthorized discharges from the facility (e.g., spills, leaks, etc.) that enter or have the potential to enter waters of the Commonwealth, including groundwater, notify DEP by phone as soon as possible, and document the discharge on this form by checking the box next to "Sanitary Sewer Overflows and Other Unauthorized Discharges." Record the event (discharge) date, the substance discharged (e.g., sewage, on-site chemicals, etc.), the location where the discharge occurred (e.g., manhole number, pump station name, equipment description, etc.), the volume discharged (gallons), the approximate duration of the discharge (hours), the receiving waters (name of stream or groundwater), the impact on the receiving waters, if observed (e.g., solids deposition, foam, fish kill, etc.), the cause of the discharge, and the date on which the Department was verbally notified. **If there are more than two discharge events during the monitoring period and/or if the space provided is insufficient to explain the discharge, please attach additional pages.**
4. If there are other violations of the permit, check the box next to "Other Permit Violations," and check the appropriate box that describes the violation type. If not identified on the form, check the box next to "Other" and provide a written explanation. **If the space provided is insufficient to explain the violation, please attach additional pages.**
5. Type your name and title and sign and date the form after reading the certification statement.

If you have questions about completing this form, contact the Clean Water Program Operations Section of the Department in your region:

Southeast Region – (484) 250-5970
Northeast Region – (570) 826-2553
Southcentral Region – (717) 705-4707

Northcentral Region – (570) 327-0532
Southwest Region – (412) 442-4060
Northwest Region – (814) 332-6942

SURFACE WATER MONITORING DATA REPORT

Use this form to document surface water monitoring results, where monitoring is required by the permit.

1. Enter Facility Name, Municipality, County, Watershed No., Monitoring Period (month, quarter or date range), Year, Permit No., and Surface Water Name. Complete a separate report for each sample location.

Field Analysis

INSTRUCTIONS FOR COMPLETING DMR SUPPLEMENTAL REPORTS

2. Describe the sample location, and report the stream flow (cfs) (use a flow meter or the nearest USGS gage), depth where the sample is collected, temperature (in degrees Celsius), conductivity ($\mu\text{mhos/cm}$), pH (S.U.), and dissolved oxygen (mg/l).

Lab Analysis

3. Enter the sampling date, parameter name, result and laboratory reporting limit in the space provided. Use the Qualifier (Q) column to enter "<" or ">" as appropriate for "non-detect" results and results greater than the reporting limit, respectively. Report the sample result units and laboratory reporting limit units in the spaces provided.
4. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

7. LIST OF ASSETS AND COSTS

**MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WATER SYSTEM
AS OF JULY 8, 2022**

ACCOUNT	DESCRIPTION	ORIGINAL COST (\$)
121	NON-UTILITY PROPERTY	\$ 5,335.00
303.2	LAND AND LAND RIGHTS - SOURCE OF SUPPLY AND PUMPING	\$ 17.00
303.3	LAND AND LAND RIGHTS - TREATMENT	\$ 22,000.00
303.4	LAND AND LAND RIGHTS - TRANSMISSION AND DISTRIBUTION	\$ 22,663.00
304.3	STRUCTURES AND IMPROVEMENTS - TREATMENT	\$ 7,806,735.14
304.4	STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION	\$ 109,065.50
311.4	PUMPING EQUIPMENT	\$ 1,195,824.89
330.4	DISTRIBUTION RESERVOIRS AND STANDPIPES	\$ 8,719,556.62
331.4	TRANSMISSION AND DISTRIBUTION MAINS	\$ 898,838.23
333.4	SERVICES & METERS	\$ 56,220.60
335.4	HYDRANTS	\$ 48,828.40
340.5	OFFICE FURNITURE AND EQUIPMENT	\$ 90,494.84
341.5	TRANSPORTATION EQUIPMENT	\$ 303,829.92
346.4	COMMUNICATION EQUIPMENT	\$ 33,958.59
347.5	MISCELLANEOUS EQUIPMENT	\$ 72,603.19
	SYSTEM TOTAL	\$ 19,385,970.92

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
121	<u>NON-UTILITY PROPERTY</u>						
		Caretaker House	1913	Estimated		\$	3,400.00
		Wells & Springs	1987	Previous Valuation		\$	1,935.00
	TOTAL NON-UTILITY PROPERTY					\$	5,335.00
303.2	<u>LAND AND LAND RIGHTS - SOURCE OF SUPPLY AND PUMPING</u>						
		Parcel 4 - P/O Tax Parcel 30-7-11	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 5 - P/O Tax Parcel 30-7-11	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 8 - Tax Parcel; P/O 30-8-6 & 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 9 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 10 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 11 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 12 - Tax Parcel; P/O 30-8-7 & 30-8-9	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 13 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 14 - Tax Parcel; P/O 30-7-11	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 15 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 16 - Tax Parcel; P/O 30-7-11	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 17 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 18 - Tax Parcel; P/O 30-8-7	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 21 - Tax Parcel; P/O 30-7-11 & 30-7-11.1	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 23 - Tax Parcel; 30-7-11 Part in Schuylkill & part in Columbia *	1941	Assured Realty Transfers Memo		\$	1.00
		*Conveyed to Game Comm. In Deed recoded in Columbia Co. but not in Schuylkill County					
		Parcel 25 - Part of Reservoir Rd from 30-8-7 north to Ringtown Blvd.	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 1 - Tax Parcel; 36-1-7 & 36-1-8	1941	Assured Realty Transfers Memo		\$	1.00
	TOTAL LAND AND LAND RIGHTS - SOURCE OF SUPPLY AND PUMPING					\$	17.00
303.3	<u>LAND AND LAND RIGHTS - TREATMENT</u>						
		Condemnation of the property of The City of Philadelphia, Trustee under the Will of Stephen Girard, deceased, filed to No. S-2545-1992 and recorded December 4, 1992 in Deed Book 1490 page 786. Parcel 36-1 -5.2 Also includes right of way north to SR4032 not assessed to Mun. Authority	1992	Assured Realty Transfers Memo		\$	22,000.00
	TOTAL LAND AND LAND RIGHTS - TREATMENT					\$	22,000.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
303.4	<u>LAND AND LAND RIGHTS - TRANSMISSION AND DISTRIBUTION</u>						
		Parcel 19 - Tax Parcel; 30-7-22	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 22 - Tax Parcel; 36-2-26	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 24 - Tax Parcel; 30-8-58, 30-8-58.1, 30-8-59, 30-8-60, 30-8-61	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 2 - P/O 30-9-23, 30-9-24, 36-2-2, & 36-2-3, 36-2-3.3 & 36-2-4	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 3 - P/O 30-9-23	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 4 - P/O 36-2-2 & 36-2-3	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 5- P/O 30-9-24	1941	Assured Realty Transfers Memo		\$	1.00
		ROWS - Deed from The Hammond Water Company to The Municipal Authority of the Borough of Shenandoah, dated December 29, 1941 and recorded December 30, 1941 in Deed Book 625 page 682.	1941	Assured Realty Transfers Memo		\$	1.00
		Parcel 36-8-47.5 : from Greater Shenandoah Realty Company to Municipal Authority of the Borough of Shenandoah, dated May 4, 1973 and recorded May 21, 1973 in Deed Book 1174 page 35.	1973	Assured Realty Transfers Memo		\$	2,000.00
		Deed from American Bank and Trust Company of Pennsylvania, Trustee for Donald Miller to Municipal Authority of the Borough of Shenandoah, dated March 14, 1980 and recorded March 18, 1980 in Deed Book 1287 page 147. Parcel 64-5-283 (Maintenance Building)	1980	Assured Realty Transfers Memo		\$	8,500.00
		Deed from Paul K. Edwards and Frederick H. Edwards, Individually and as Executors of the Estate of Emma K. Edwards, deceased, et.al. to Municipal Authority of the Borough of Shenandoah, dated May 3, 1980 and recorded May 7, 1980 in Deed Book 1289 page 341. Parcel 64-5- 281.2 (Warehouse)	1980	Assured Realty Transfers Memo		\$	12,000.00
		Deed from The Glover's Hill Athletic Club to The Municipal Authority of the Borough of Shenandoah, dated June 15, 1990 and recorded June 13, 1990 in Deed Book 1447 page 930. Quitclaim deed for strip or parcel of right of way along W. Penn St., Shenandoah, map attached to deed. Not assessed to Municipal Authority.	1990	Assured Realty Transfers Memo		\$	1.00
		Deed from John Kegolis and Mary Kegolis, his wife, to The Municipal Authority of the Borough of Shenandoah, dated June 25, 1990 and recorded June 26, 1990 in Deed Book 1448 page 608. Parcel 36-2-55.5	1990	Assured Realty Transfers Memo		\$	1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Deed from The Recreation Authority of the Borough of Shenandoah to The Municipal Authority of the Borough of the Borough of Shenandoah, dated September 17, 1990 and recorded September 18, 1990 in Deed Book 1452 page 780. Parcel 36-2-3.2	1990	Assured Realty Transfers Memo		\$	1.00
		Deed from The Municipal Authority of the Borough of Shenandoah to The Delaware Valley Utilities Company, dated December 29, 1941 and recorded December 30, 1941 in Deed Book 625 page 672. All of Parcel 26 in Deed Book 625-617, to be excluded from transfer.	1941	Assured Realty Transfers Memo		\$	1.00
		Deed from The Municipal Authority of the Borough of Shenandoah to The Recreation Authority of the Borough of Shenandoah, dated October 26, 1967 and recorded November 6, 1967 in Deed Book 1092 page 206. Note to be excepted from Parcel 2 in Deed Book 625 page 676. Was part of Parcel 36-2-3 now known as parcel 36-2-3.1.	1967	Assured Realty Transfers Memo		\$	141.00
		Deed from Municipal Authority of the Borough of Shenandoah to Martin F. Brophy and Stephanie M, Brophy, his wife, dated December 31,2002 and recorded January 24, 2003 in Record Book 2025 page 1947. All of Parcel 1 in Deed Book 625-676, to be excluded from transfer.	2002	Assured Realty Transfers Memo		\$	1.00
		Deed from the Municipal Authority of the Borough of Shenandoah to Commonwealth of Pennsylvania, solely for the use of the Pennsylvania Game Commission, dated November 17, 2005 and recorded December 8, 2005 in Record Book 2182 page 565. Parcels 2, 6 & 7 in Deed Book 625-617, to be excluded from transfer.	2005	Assured Realty Transfers Memo		\$	1.00
		ROW to Pennsylvania Power & Light Company, dated January 13, 1972 and recorded May 3, 1972 in Miscellaneous Book 172 page 176.	1972	Assured Realty Transfers Memo		\$	1.00
		Right-of-way to Pennsylvania Power & Light Company, dated October 1, 1987 and recorded February 24, 1988 in Miscellaneous Book 258 page 979.	1988	Assured Realty Transfers Memo		\$	1.00
		Right-of-way to Pennsylvania Power & Light Company, dated April 20, 1993 and recorded May 20, 1993 in Miscellaneous Book 321 page 170.	1993	Assured Realty Transfers Memo		\$	1.00
		Locust Ridge II Wind Farm, Union Township Plan recorded February 1, 2008 in Map Book 55 page 3.	2008	Assured Realty Transfers Memo		\$	1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Memorandum of Wind Energy Lease and Easement Agreement with Locust Ridge II, LLC, dated September 1,2008 and recorded December 2, 2008 in Record Book 2324 page 201.	2008	Assured Realty Transfers Memo		\$	1.00
		Locust Ridge II Wind Farm, West Mahanoy Township recorded December 8, 2008 in Map Book 56 page 35	2008	Assured Realty Transfers Memo		\$	1.00
		Amended and Restated Memorandum of Wind Energy Lease and Easement Agreement with Locust Ridge II, LLC, dated September 1,2008 and recorded March 5, 2010 in Record Book 2365 page 160.	2010	Assured Realty Transfers Memo		\$	1.00
		Permission to relocate water line from The City of Philadelphia, Trustee under the Will of Stephen Girard, deceased, dated March 7, 2011 and recorded March 14, 2011 in Record Book 2397 page 2905.	2011	Assured Realty Transfers Memo		\$	1.00
		TOTAL LAND AND LAND RIGHTS - TRANSMISSION AND DISTRIBUTION				\$	22,663.00
304.3		STRUCTURES AND IMPROVEMENTS - TREATMENT					
		Plant Upgrade	2012	Previous Valuation		\$	663,361.82
		Plant System Support Software Upgrade	2013	Previous Valuation		\$	4,866.00
		HMI Upgrade on SCADA System	2014	Previous Valuation		\$	16,500.00
		WTP Equipment	2009	Previous Valuation		\$	19,787.82
		WTP Lighting Fixtures	2013	Previous Valuation		\$	8,333.61
		Plant Equipment	2008	Previous Valuation		\$	38,500.00
		Water Treatment Plant - Electrical	1993	Contract & Previous Valuation		\$	667,575.00
		Water Treatment Plant - HVAC & Plumbing	1993	Contract & Previous Valuation		\$	764,799.00
		Bldg & Structures	1982	Previous Valuation		\$	500,521.50
		Filtration Plant	1993	Previous Valuation		\$	4,787,310.68
		Water Treatment Equipment	1988	Previous Valuation		\$	204,537.90
		Ptools Shop & Equip	1999	Previous Valuation		\$	130,641.81
		TOTAL STRUCTURES AND IMPROVEMENTS - TREATMENT				\$	7,806,735.14
304.4		STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION					
		PRV Valve Pit - No.7 Pump Station	1991	Contract	PRV on 12" Transmission Line	\$	53,705.00
		PRV Valve Pit - Raven Run Road	2009	Estimated from Previous Assessment		\$	55,360.50
		TOTAL STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION				\$	109,065.50

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
311.4	<u>PUMPING EQUIPMENT</u>						
		Turkey Run Pump Station	1974	Estimated			\$ 41,000.00
		Pump Stations #5 Roof Repairs	2012	Previous Valuation			\$ 11,430.00
		Pump for Reservoir #5	2015	Previous Valuation			\$ 88,890.96
		WTP High End Pump Station	1993	Contract & Previous Valuation			\$ 764,799.00
		Ringtown Pump Station #5	1913	Estimated as 10% of Dam Cost			\$ 20,000.00
		Pumping Equipment	1999	Previous Valuation			\$ 195,068.93
		Turkey Run Pump Station - Upgrades	2020	Contractor			\$ 30,000.00
		Pump Station #7	1914	Estimated			\$ 10,000.00
		Pump Station #7 - Upgrades	2009	Estimated			\$ 9,536.00
		Ringtown Pump Station #5 - Upgrades	1977	Estimated			\$ 25,100.00
		TOTAL PUMPING EQUIPMENT					\$ 1,195,824.89

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
330.4	<u>DISTRIBUTION RESERVOIRS AND STANDPIPES</u>						
		Turkey Run Tank	1974	Estimate based on similar Tank			\$ 179,000.00
		Kehly Run Tank	1991	Contract			\$ 614,359.00
		Raven Run Dam No. 2	1885	Estimated			\$ 150,000.00
		Raven Run Dam No. 3	1885	Estimated			\$ 150,000.00
		Permanent Repairs Reservoir #5	2009	Previous Valuation			\$ 75,091.67
		Water System Improvements - Eng.	2009	Previous Valuation			\$ 61,577.96
		Raven Run III Reservoir Repairs	2012	Previous Valuation			\$ 27,750.00
		Water Storage Tanks Repairs	2009	Previous Valuation			\$ 7,630.00
		Ringtown Dam No. 5	1914	Estimated			\$ 180,000.00
		Ringtown Dam No. 6	1920	Estimated			\$ 200,000.00
		Engineering Fees - Dam	1992	Previous Valuation			\$ 1,654,315.46
		Collect & Reservoirs	1981	Previous Valuation			\$ 3,289,993.37
		Dist Res & Standpipes	1987	Previous Valuation			\$ 1,113,598.44
		WTP 850,000 gal Storage Tank	1993	Estimate based on Kehly Run Tank			\$ 663,507.72
		Swatara Road Standpipe	1978	Estimate based on Kehly Run Tank			\$ 352,733.00
		TOTAL DISTRIBUTION RESERVOIRS AND STANDPIPES					\$ 8,719,556.62

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
331.4	TRANSMISSION AND DISTRIBUTION MAINS						
		Meters, Mains, Service Lines	2006	Previous Valuation			\$ 19,345.14
		Meters, Mains, Service Lines	2007	Previous Valuation			\$ 32,020.76
		Meters, Mains, Service Lines	2008	Previous Valuation			\$ 20,884.05
		Meters, Mains, Service Lines	2009	Previous Valuation			\$ 2,591.99
		Meters, Mains, Service Lines	2010	Previous Valuation			\$ 7,125.94
		Valves	1885	Quantities from GIS, price included in piping		3	\$ -
		Valves	1903	Quantities from GIS, price included in piping		455	\$ -
		Valves	1940	Quantities from GIS, price included in piping		43	\$ -
		Valves	1952	Quantities from GIS, price included in piping		6	\$ -
		Valves	1974	Quantities from GIS, price included in piping		7	\$ -
		Valves	1991	Quantities from GIS, price included in piping		13	\$ -
		1" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		2,064	\$ 598.69
		1" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		1,385	\$ 1,002.33
		2" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		2,251	\$ 652.89
		2" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		9,407	\$ 6,807.82
		3" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		3,148	\$ 913.19
		3" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		5,337	\$ 3,862.69
		4" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		59,869	\$ 21,708.11
		4" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		15,292	\$ 13,833.47
		4" CIP	1941	Quantities from GIS, unit pricing estimated and backdated		3,058	\$ 2,949.23
		4" CIP	1952	Quantities from GIS, unit pricing estimated and backdated		4,798	\$ 10,205.20
		4" DIP	1974	Quantities from GIS, unit pricing estimated and backdated		1,276	\$ 9,638.24
		4" Transite	1974	Quantities from GIS, unit pricing estimated and backdated		928	\$ 7,008.88
		6" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		29,518	\$ 13,378.99
		6" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		10,786	\$ 12,196.04
		6" CIP	1952	Quantities from GIS, unit pricing estimated and backdated		12,646	\$ 33,621.79
		6" CIP	1977	Quantities from GIS, unit pricing estimated and backdated		1,581	\$ 19,026.33

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		6" Transite	1940	Quantities from GIS, unit pricing estimated and backdated		3,764	\$ 4,255.76
		6" Transite	1974	Quantities from GIS, unit pricing estimated and backdated		2,286	\$ 21,581.14
		6" Transite	1977	Quantities from GIS, unit pricing estimated and backdated		6,256	\$ 75,306.51
		8" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		6,014	\$ 3,018.38
		8" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		19,445	\$ 24,348.47
		8" CIP	1952	Quantities from GIS, unit pricing estimated and backdated		4,757	\$ 14,005.46
		8" DIP	1952	Quantities from GIS, unit pricing estimated and backdated		183	\$ 537.53
		8" DIP	1983	Quantities from GIS, unit pricing estimated and backdated		517	\$ 10,876.93
		10" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		4,842	\$ 3,190.19
		10" DIP	1903	Quantities from GIS, unit pricing estimated and backdated		371	\$ 244.28
		12" CIP	1903	Quantities from GIS, unit pricing estimated and backdated		4,950	\$ 3,932.94
		12" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		7,824	\$ 15,507.73
		12" DIP	1990	Contract		6,872	\$ 297,381.33
		12" DIP	1993	Quantities from GIS, unit pricing estimated and backdated		2,127	\$ 99,183.44
		16" CIP	1913	Quantities from GIS, unit pricing estimated and backdated		7,218	\$ 6,460.01
		16" CIP	1920	Quantities from GIS, unit pricing estimated and backdated		12,371	\$ 27,791.64
		16" CIP	1940	Quantities from GIS, unit pricing estimated and backdated		321	\$ 695.27
		16" CIP	1990	Contract		1,130	\$ 48,900.02
		16" DIP	1885	Quantities from GIS, unit pricing estimated and backdated		2,103	\$ 1,825.46
		16" DIP	1940	Quantities from GIS, unit pricing estimated and backdated		10	\$ 22.64
		16" DIP	1952	Quantities from GIS, unit pricing estimated and backdated		7	\$ 35.95
		24" CIP	1913	Quantities from GIS, unit pricing estimated and backdated		355	\$ 365.39
TOTAL TRANSMISSION AND DISTRIBUTION MAINS							\$ 898,838.23

333.4 SERVICES & METERS

	Meter Equipment	2006	Previous Valuation			\$ 21,795.18	
	Meter Equipment	2007	Previous Valuation			\$ 1,785.08	
	Services	1903	Quantities and pricing estimated		43,485	\$ 32,640.34	
TOTAL SERVICES & METERS							\$ 56,220.60

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
335.4	<u>HYDRANTS</u>						
		Hydrants	1903		Quantities from GIS, unit pricing estimated and backdated	91	\$ 3,637.60
		Hydrants	1940		Quantities from GIS, unit pricing estimated and backdated	53	\$ 5,285.58
		Hydrants	1952		Quantities from GIS, unit pricing estimated and backdated	20	\$ 4,689.69
		Hydrants	1975		Quantities from GIS, unit pricing estimated and backdated	10	\$ 9,115.64
		Hydrants	1984		Quantities from GIS, unit pricing estimated and backdated	7	\$ 11,959.94
		Hydrants	1990		Quantities from GIS, unit pricing estimated and backdated	6	\$ 11,700.32
		Hydrants	1998		Quantities from GIS, unit pricing estimated and backdated	1	\$ 2,439.63
		TOTAL HYDRANTS					\$ 48,828.40
340.5	<u>OFFICE FURNITURE AND EQUIPMENT</u>						
		KM2550 Kyocera Copier	2007		Previous Valuation		\$ 2,789.00
		Various Office Equipment	2008		Previous Valuation		\$ 1,533.75
		Security System	2009		Previous Valuation		\$ 4,920.97
		4 Camera System w/ DVR (#5 house)	2010		Previous Valuation		\$ 1,995.00
		4 Camera System w/ DVR (garage)	2011		Previous Valuation		\$ 1,995.00
		APC Smart-UPS 5000VA Tower Battery	2012		Previous Valuation		\$ 4,495.00
		Office Furn & Equip	1999		Previous Valuation		\$ 72,766.12
		TOTAL OFFICE FURNITURE AND					\$ 90,494.84
341.5	<u>TRANSPORTATION EQUIPMENT</u>						
		2019 F350 Dump Truck	2019		MABS		\$ 48,895.00
		Plow Installed on Dump Truck	2008		Previous Valuation		\$ 4,430.10
		2009 Ford F150 Truck	2009		Previous Valuation		\$ 21,844.22
		2000 Chevy Silverado	2000		MABS		\$ 5,000.00
		2010 Ford F150 Truck	2010		Previous Valuation		\$ 22,825.00
		2011 Ford Ranger Truck	2010		Previous Valuation		\$ 21,036.62
		2010 Jeep Liberty	2010		MABS		\$ 9,222.97
		Trans Equip	1999		Previous Valuation		\$ 170,576.01
		TOTAL TRANSPORTATION EQUIPMENT					\$ 303,829.92
346.4	<u>COMMUNICATION EQUIPMENT</u>						
		Comm Equip	2014		Previous Valuation		\$ 33,958.59
		TOTAL COMMUNICATION EQUIPMENT					\$ 33,958.59

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
347.5	MISCELLANEOUS EQUIPMENT						
		Tools	2007	Previous Valuation			\$ 2,069.95
		Lawn Tractor	2008	Previous Valuation			\$ 3,019.99
		Tools & Equipment	2009	Previous Valuation			\$ 12,672.98
		Tools & Equipment	2010	Previous Valuation			\$ 2,027.67
		Commercial Lawn Mower	2010	Previous Valuation			\$ 8,520.00
		Wacker Generator	2010	Previous Valuation			\$ 2,200.00
		Actuator	2011	Previous Valuation			\$ 4,777.00
		Actuator	2013	Previous Valuation			\$ 13,135.00
		Actuator	2015	Previous Valuation			\$ 5,546.28
		Permanent Electrical Repairs	2011	Previous Valuation			\$ 10,695.00
		Wacker	2015	Previous Valuation			\$ 2,541.25
		Other Equip	1998	Previous Valuation			\$ 5,398.07
		TOTAL MISCELLANEOUS EQUIPMENT					\$ 72,603.19
		SYSTEM TOTAL					\$ 19,385,970.92

APPENDICES

APPENDIX A

SYSTEM MAPS

- **Shenandoah Water Facilities**

PUBLIC COPY

SYSTEM MAPS – REMOVED FOR CONFIDENTIALITY.

**SYSTEM MAPS WILL BE FILED WITH THE
CONFIDENTIAL DOCUMENTS.**

APPENDIX B

- Uniform System of Accounts for Class A Water Utilities
- PA ACT 12 of 2016

WATER UTILITY PLANT ACCOUNTS

.1

	Intangible Plant
301. Organization	301.1
302. Franchises	302.1
303. Land and Land Rights	XXXXXXXXXXXXX
304. Structures and Improvements	XXXXXXXXXXXXX
305. Collecting and Impounding Reservoirs	XXXXXXXXXXXXX
306. Lake, River and Other Intakes	XXXXXXXXXXXXX
307. Wells and Springs	XXXXXXXXXXXXX
308. Infiltration Galleries and Tunnels	XXXXXXXXXXXXX
309. Supply Mains	XXXXXXXXXXXXX
310. Power Generation Equipment	XXXXXXXXXXXXX
311. Pumping Equipment	XXXXXXXXXXXXX
320. Water Treatment Equipment	XXXXXXXXXXXXX
330. Distribution Reservoirs and Standpipes	XXXXXXXXXXXXX
331. Transmission and Distribution Mains	XXXXXXXXXXXXX
333. Services	XXXXXXXXXXXXX
334. Meters and Meter Installations	XXXXXXXXXXXXX
335. Hydrants	XXXXXXXXXXXXX
336. Backflow Prevention Devices	XXXXXXXXXXXXX
339. Other Plant and Miscellaneous Equipment	339.1
340. Office Furniture and Equipment	XXXXXXXXXXXXX
341. Transportation Equipment	XXXXXXXXXXXXX
342. Stores Equipment	XXXXXXXXXXXXX
343. Tools, Shop and Garage Equipment	XXXXXXXXXXXXX
344. Laboratory Equipment	XXXXXXXXXXXXX
345. Power Operated Equipment	XXXXXXXXXXXXX
346. Communication Equipment	XXXXXXXXXXXXX
347. Miscellaneous Equipment	XXXXXXXXXXXXX
348. Other Tangible Plant	XXXXXXXXXXXXX

WATER UTILITY PLANT ACCOUNTS

<u>.2</u>	<u>.3</u>	<u>.4</u>	<u>.5</u>
Source of Supply and Pumping <u>Plant</u>	Water Treatment <u>Plant</u>	Transmission and Distribution <u>Plant</u>	General <u>Plant</u>
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
303.2	303.3	303.4	303.5
304.2	304.3	304.4	304.5
305.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
306.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
307.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
308.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
309.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
310.2	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
311.2	311.3	311.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	320.3	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	330.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	331.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	333.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	334.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	335.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	336.4	XXXXXXXXXXXXXXXXXX
339.2	339.3	339.4	XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	340.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	341.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	342.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	343.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	344.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	345.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	346.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	347.5
XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX	348.5

WATER UTILITY PLANT ACCOUNTS

The water utility plant accounts have been designed utilizing an account matrix. The matrix employs a list of object accounts which in effect act as control accounts. The object accounts are further segregated by the matrix into classifications by functions or subaccounts. The instructions for segregating the object accounts to the function subaccounts are contained in Accounting Instruction 31. Listed below are the object account descriptions.

301. Organization

This account shall include all fees paid to federal or state governments for the privilege of incorporation and expenditures incident to organizing the corporation, partnership or other enterprise and putting it into readiness to do business. A sample of items to be included in this account are listed below.

1. Actual cost of obtaining certificates authorizing an enterprise to engage in the public utility business.
2. Fees and expenses for incorporation.
3. Fees and expenses for mergers or consolidations.
4. Office expenses incident to organizing the utility.
5. Stock and minute books and corporate seal.

Note A:--This account shall not include any discounts upon securities issued or assumed; nor shall it include any costs incident to negotiating loans, selling bonds or other evidences of debt, or expenses in connection with the authorization, issuance and sale of capital stock.

Note B:--Exclude from this account and include in the appropriate expense account the cost of preparing and filing papers in connection with the extension of the term of incorporation unless the first organization costs have been written off. Where charges are made to this account for expenses incurred in mergers, consolidations or reorganizations, amounts previously included herein or in similar accounts in the books of the companies concerned shall be excluded from this account.

302. Franchises

A. This account shall include amounts paid to the federal government, to a state or to a political subdivision thereof in consideration for franchises, consents or certificates, running in perpetuity or for a specified term of more than one year, together with necessary and reasonable expenses incident to procuring such franchises, consents or certificates of permission and approval, including expenses of organizing and merging separate corporations, where statutes require solely for the purpose of acquiring franchise.

WATER UTILITY PLANT ACCOUNTS

B. If a franchise or certificate is acquired by assignment, the charge to this account in respect thereof shall not exceed the amount paid therefor by the utility to the assignor, nor shall it exceed the amount paid by the original grantee, plus the expense of acquisition to such grantee. Any excess of the amount actually paid by the utility over the amount above specified shall be charged to account 426 - Miscellaneous Nonutility Expenses.

C. When any franchise has expired, the book cost thereof shall be credited hereto and charged to account 426 - Miscellaneous Nonutility Expenses, or to account 110.1 - Accumulated Amortization of Utility Plant in Service, as appropriate.

D. Records supporting this account shall be kept so as to show separately the book cost of each franchise.

Note:--Annual or other periodic payments under franchises shall not be included herein but in the appropriate expense account.

303. Land and Land Rights

This account shall include the cost of land and land rights used in connection with source of supply, pumping, water treatment plant, transmission and distribution, and general plant operations (See Accounting Instruction 24). A sample of items to be included in this account are listed below:

1. Bulkheads buried, not requiring maintenance or replacement.
2. Cost, first, of acquisition including mortgages and other liens assumed (but not subsequent interest thereon).
3. Condemnation proceedings, including court and counsel costs.
4. Consents and abutting damages, payment for.
5. Conveyancers' and notaries' fees.
6. Fees, commissions, and salaries to brokers, agents, and others in connection with the acquisition of the land or land rights.
7. Leases, cost of voiding upon purchase to secure possession of land.
8. Removing, relocating, or reconstructing property of others, such as buildings, highways, railroads, bridges, cemeteries, churches, telephone and power lines, etc., in order to acquire quiet possession.
9. Retaining walls unless identified with structures.

WATER UTILITY PLANT ACCOUNTS

10. Special assessments levied by public authorities for public improvements on the basis of benefits for new roads, new bridges, new sewers, new curbing, new pavements, and other public improvements, but not taxes levied to provide for the maintenance of such improvements.
11. Surveys in connection with the acquisition, but not amounts paid for topographical surveys and maps where such costs are attributable to structures or plant equipment erected or to be erected or installed on such land.
12. Taxes assumed, accrued to date of transfer of title.
13. Title, examining, clearing, insuring and registering in connection with the acquisition and defending against claims relating to the period prior to the acquisition.
14. Appraisals prior to closing title.
15. Cost of dealing with distributees or legatees residing outside of the state or county, such as recording power of attorney, recording will or exemplification of will, recording satisfaction of state tax.
16. Filing satisfaction of mortgage.
17. Documentary stamps.
18. Photographs of property at acquisition.
19. Fees and expenses incurred in the acquisition of water rights, and grants.
20. Cost of fill to extend bulkhead line over land under water, where riparian rights are held, which is not occasioned by the erection of a structure.
21. Sidewalks and curbs constructed by the utility on public property.
22. Labor and expenses in connection with securing rights of way, where performed by company employees and company agents.

304. Structures and Improvements

This account shall include cost in place of structures and improvements used in connection with source of supply, pumping, water treatment, transmission and distribution and general plant (See Accounting Instruction 25). A sample of items to be included in this account are listed below:

1. Architects' plans and specifications including supervision.

WATER UTILITY PLANT ACCOUNTS

2. Boilers, furnaces, piping, wiring, fixtures and machinery for heating, lighting, signaling, ventilating and air conditioning systems, plumbing, vacuum cleaning systems, incinerator and smoke pipe, flues, etc.
3. Bulkheads, including dredging, riprap fill, piling, decking, concrete, fenders, etc., when exposed and subject to maintenance and replacement.
4. Commissions and fees to brokers, agents, architects and others.
5. Conduit (not to be removed) with its contents.
6. Damages to abutting property during construction.
7. Drainage systems.
8. Elevators, cranes, hoists, etc., and the machinery for operating them.
9. Excavation, including shoring, bracing, bridging, refill and disposal of excess excavated material, cofferdams around foundations, pumping water from cofferdam during construction, test borings.
10. Fences and fence curbs (not including protective fences isolating items of equipment, which should be charged to the appropriate equipment account).
11. Fire protection systems when forming a part of a structure.
12. Flagpole.
13. Floor covering (permanently attached).
14. Foundations and piers for machinery, constructed as a permanent part of a building or other item listed herein.
15. Grading and clearing when directly occasioned by the building of a structure.
16. Intrasite communication system, poles, pole fixtures, wires and cables.
17. Landscaping, lawns, shrubbery, etc.
18. Leases, voiding upon purchase, to secure possession of structures.
19. Leased property, expenditures on.
20. Lighting fixtures and outside lighting systems.
21. Marquee, permanently attached to building.
22. Painting, first cost.
23. Permanent paving, concrete, brick, flagstone, asphalt, etc., within the property lines.
24. Partitions, including movable.
25. Permits and privileges.
26. Water and wastewater systems, for general use.
27. Power boards for services to a building.
28. Retaining walls except when identified with land.
29. Roadways.
30. Roofs.

WATER UTILITY PLANT ACCOUNTS

31. Scales, connected to and forming a part of a structure.
32. Sidewalks, culverts, curbs and streets constructed by the utility on its property.
33. Sprinkling systems.
34. Sump pumps and pits.
35. Stacks -- brick, steel, or concrete, when set on foundation forming part of general foundation and steelwork of a building.
36. Steel inspection during construction.
37. Storage facilities constituting a part of a building.
38. Storm doors and windows.
39. Tanks, constructed as part of a building or as distinct structural units.
40. Temporary heating during construction (net cost).
41. Temporary water connection during construction (net cost).
42. Temporary shanties and other facilities used during construction (net cost).
43. Topographical maps.
44. Tunnels, intake and discharge, when constructed as part of a structure, including sluice gates and those constructed to house mains.
45. Vaults constructed as part of a building.
46. Watchmen's sheds and clock systems (net cost when used during construction only).
47. Water basins or reservoirs.
48. Water front improvements.
49. Water supply piping, hydrants and wells.
50. Water meters and supply system for a building or for general company purposes.
51. Yard surfacing, gravel, concrete, or oil (First cost only).
52. Plant metering.

305. Collecting and Impounding Reservoirs

This account shall include the cost in place of structures and improvements used for impounding, collecting and storing water in the source of supply system. A sample of items to be included in this account are listed below:

1. Aerators (when installed as an integral part of collecting and impounding reservoirs).
2. Bridges and culverts.
3. Clearing land.
4. Dams.
5. Drainage conduits.
6. Embankments.
7. Fish ladders and elevators.

WATER UTILITY PLANT ACCOUNTS

8. Fences.
9. Gate houses and equipment.
10. Landscaping.
11. Lighting systems.
12. Retaining walls.
13. Roads and paths.
14. Sewers.
15. Spillways and channels.
16. Any other permanent improvement to collecting and impounding reservoirs.

306. Lake, River and Other Intakes

This account shall include the cost installed of lake, river and other intakes used as a source of water supply. A sample of items to be included in this account are listed below:

1. Clearing land..
2. Conduits.
3. Cribs.
4. Fences.
5. Gate houses and equipment.
6. Intake pipes (up to suction header).
7. Intake wells.
8. Lighting systems.
9. Screens and racks.

307. Wells and Springs

This account shall include the cost installed of wells and springs used as a source of water supply. A sample of items to be included in this account are listed below:

1. Clearing land.
2. Collecting basins.
3. Collecting pipes.
4. Fences.
5. Landscaping.
6. Lighting systems.
7. Overflow spillways and channels.
8. Sewers.
9. Springs and appurtenances.
10. Wells, casings and appurtenances, including cost of test wells and nonproductive wells drilled as part of a project resulting in a source of water within the same supply area.

WATER UTILITY PLANT ACCOUNTS

308. Infiltration Galleries and Tunnels

This account shall include the cost installed of infiltration galleries and tunnels used as a source of water supply. A sample of items to be included in this account are listed below:

1. Conduits.
2. Gate houses and equipment.
3. Piping.

309. Supply Mains

This account shall include the cost installed of supply mains, pipes, aqueducts and canals and their appurtenances. A sample of items to be included in this account are listed below:

1. Air chambers.
2. Blow-offs and overflows.
3. Bridges and culverts.
4. Canals.
5. Electrolysis control equipment.
6. Manholes.
7. Municipal inspection or permits.
8. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
9. Pipes, aqueducts or conduits.
10. Placing mains and accessories.
11. Special castings.
12. Sterilizing new mains.
13. Surge tanks.
14. Trenching, including shoring, bracing, bridging, pumping, backfill and disposal of excess excavated material.
15. Tunnels.
16. Valves, valve vaults and appurtenances.

310. Power Generation Equipment

A. This account shall include the cost installed of any equipment used for the production of power principally used in pumping operations.

B. Subaccounts shall be maintained hereunder for the cost of equipment used for each type of power generating equipment.

WATER UTILITY PLANT ACCOUNTS

311. Pumping Equipment

This account shall include the cost of pumping equipment driven by electric power, diesel engines, steam engines and hydraulic water wheels and turbines. A sample of items to be included in this account are listed below:

1. Engines, motors, water wheels and turbines for driving pumps.
2. Pumps, including setting, gearing, shafting and belting.
3. Water piping within station, including valves.
4. Auxiliary equipment for engines and pumps such as oiling systems, cooling systems, condensers, etc.
5. Oil supply lines and accessories.
6. Regulating, recording and measuring devices.
7. Foundations, frames and bed plates.
8. Ladders, stairs and platforms if a part of pumping unit.

320. Water Treatment Equipment

This account shall include the cost installed of apparatus, equipment and other facilities used for the treatment of water. A sample of items to be included in this account are listed below:

1. Aerators (when installed as an integral part of the water treatment plant).
2. Chemical treating plant.
3. Clear water basin.
4. Disinfection equipment.
5. Filter plant.
6. Mixing chambers.
7. Reverse osmosis membranes.
8. Sedimentation or coagulation basin.
9. Softening plant.

Note:--Protecting superstructures shall be included in account 304 - Structures and Improvements.

330. Distribution Reservoirs and Standpipes

This account shall include the cost in place of reservoirs, tanks, standpipes, and appurtenances used in storing water for distribution (See Accounting Instruction 24). A sample of items to be included in this account are listed below:

1. Aerators (when installed as an integral part of distribution reservoirs).
2. Bridges and culverts.

WATER UTILITY PLANT ACCOUNTS

3. Clearing land.
4. Dams.
5. Embankments.
6. Fences.
7. Foundations.
8. Gates and gate houses.
9. Landscaping.
10. Lighting systems.
11. Piping system within reservoirs.
12. Retaining walls.
13. Roads and paths.
14. Rust-proofing apparatus.
15. Sewer drain or storm sewer.
16. Spillways and channels.
17. Standpipes.
18. Tanks.
19. Towers.
20. Valves.

331. Transmission and Distribution Mains

A. This account shall include the cost installed of transmission and distribution mains and appurtenances. A sample of items to be included in this account are listed below:

1. Air chambers.
2. Blow-offs and overflows.
3. Bridges and culverts.
4. Electrolysis control equipment.
5. Gauges and recorders.
6. Jointing and jointing material.
7. Manholes.
8. Meters and appurtenances.
9. Municipal inspection or permits.
10. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
11. Pipes.
12. Fire mains.

B. Records supporting this account shall be so kept as to show separately the cost of mains of different sizes and types and of each tunnel, bridge, or river crossing.

WATER UTILITY PLANT ACCOUNTS

333. Services

A. This account shall include the cost installed of service pipes and accessories leading to the customers' premises.

B. A complete service begins with the connection on the main and extends to but does not include the connection with the customer's meter. A stub service extends from the main to the property line, or the curb stop (curb stop cock).

C. Services which have been used but have become inactive shall be retired from utility plant in service immediately if there is no prospect for reuse, and, in any event, shall be retired by the end of the second year following that during which the service became inactive unless reused in the interim.

Items

1. Corporation stops or tees.
2. Gate valves and boxes.
3. Goose necks.
4. Jointing and jointing material.
5. Municipal inspection or permits.
6. Pavements disturbed, including cutting and replacing pavement, pavement base and sidewalks.
7. Pipes.
8. Placing pipes and accessories.
9. Protection of street openings.
10. Service or curb boxes.
11. Service or curb stops (curb stop cocks).
12. Tapping main.
13. Tapping saddle.

Note:--When a customer pays all or a part of the cost of the service and such cost is properly includible in this account, the amount borne or contributed by the customer shall be credited to account 271 - Contributions in Aid of Construction.

WATER UTILITY PLANT ACCOUNTS

334. Meters and Meter Installations

A. This account shall include the cost of meters, devices and appurtenances attached thereto, used for measuring the quantity of water delivered to users, whether actually in service or held in reserve. It shall also include the cost of labor employed, materials used and expenses incurred in connection with the original installation of a customer's meters and devices and appurtenances attached thereto.

B. When a meter and/or meter installation is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering meters shall be so kept that the utility can furnish information as to the number of meters of each type and size in service and in reserve as well as the location of each meter included in this account.

D. A sample of items to be included in this account are listed below:

1. Meters, including badging and initial testing.
2. Remote meter registers.
3. Installation labor (first installation only).
4. Meter coupling.
5. Meter bars.
6. Meter yokes.
7. Meter fittings, connections and shelves.
8. Meter vaults or boxes.
9. Stops.

Note A:--This account shall not include meters for recording the output of a supply or treatment plant, or those located on mains. It includes only those meters to record water delivered to customers, including company use and for those used elsewhere in the system if a type available for general use.

Note B:--The utility shall maintain a statistical record to show separately the number of each type and size of meter or group of types and sizes as carried in the continuing property record. Underlying records shall be kept so that the utility can determine readily for each such classification the number of company-owned meters in service (subdivided between active and inactive) and the number of meters carried herein but not in service, the latter to include meters undergoing repairs; and the number of meters in service owned by customers.

WATER UTILITY PLANT ACCOUNTS

Note C:--When a customer pays all or a part of the cost of the meter and such cost is properly includible in this account, the amount borne or contributed by the customer shall be credited to account 271 - Contributions in Aid of Construction.

335. Hydrants

A. This account shall include the cost installed of hydrants in service owned by the utility. A sample of items to be included in this account are listed below:

1. Connections to main.
2. Excavation, backfill, and disposal of excess excavated material.
3. Hydrants and fittings, including barrel and shoe.
4. Manholes.
5. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
6. Pipe including leads and drains.
7. Tee at main.
8. Valves and valve boxes.

336. Backflow Prevention Devices

A. This account shall include the cost of backflow prevention devices, and appurtenances attached thereto, used for preventing the backflow of water, whether actually in service or held in reserve. It shall also include the cost of labor employed, materials used and expenses incurred in connection with the original installation of a customer's backflow prevention device and appurtenances attached thereto unless done in conjunction with a meter installation.

B. When a backflow prevention device is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering backflow prevention devices shall be so kept that the utility can furnish information as to the number of backflow prevention devices of each type and size in service and in reserve as well as the location of each backflow prevention device included in this account.

339. Other Plant and Miscellaneous Equipment

This account shall include the cost installed of all other intangible, source of supply and pumping, water treatment and transmission and distribution plant not provided for in the foregoing accounts.

WATER UTILITY PLANT ACCOUNTS

340. Office Furniture and Equipment

A. This account shall include the cost of office furniture and equipment owned by the utility and devoted to utility service, and not permanently attached to buildings, except the cost of such furniture and equipment which the utility elects to assign to other plant accounts on a functional basis. A sample of items to be included in this account are listed below:

1. Book cases and shelves.
2. Desk, chairs, and desk equipment.
3. Drafting room equipment.
4. Electronic data processing equipment.
5. Filing, storage and other cabinets.
6. Floor covering.
7. Library and library equipment.
8. Mechanical office equipment such as accounting machines, typewriters, etc.
9. Safes.
10. Tables.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

341. Transportation Equipment

This account shall include the cost of transportation vehicles used for utility purposes. A sample of items to be included in this account are listed below:

1. Airplanes.
2. Automobiles.
3. Bicycles.
4. Electrical vehicles.
5. Motor trucks.
6. Motorcycles.
7. Repair cars or trucks.
8. Tractors and trailers.
9. Other transportation vehicles.

342. Stores Equipment

A. This account shall include the cost of equipment used for the receiving, shipping, handling and storage of materials and supplies.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location. A sample of items to be included in this account are listed below:

WATER UTILITY PLANT ACCOUNTS

1. Chain falls.
2. Counters.
3. Cranes (portable).
4. Elevating and stacking equipment (portable).
5. Hoists.
6. Lockers.
7. Scales.
8. Shelving.
9. Storage bins.
10. Trucks, hand and power driven.
11. Wheelbarrows.

343. Tools, Shop and Garage Equipment

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or includible in other accounts. A sample of items to be included in this account are listed below:

1. Air compressors.
2. Anvils.
3. Automobile repair shop equipment.
4. Battery charging equipment.
5. Belts, shafts and countershafts.
6. Boilers.
7. Cable pulling equipment.
8. Concrete mixers.
9. Drill presses.
10. Derricks.
11. Electric equipment.
12. Engines.
13. Forges.
14. Furnaces.
15. Foundations and settings specially constructed for and not expected to outlast the equipment for which provided.
16. Gas producers.
17. Gasoline pumps, oil pumps and storage tanks.
18. Greasing tools and equipment.
19. Hoists.
20. Ladders.
21. Lathes.
22. Machine tools.
23. Motor driven tools.
24. Motors.
25. Pipe threading and cutting tools.
26. Pneumatic tools.
27. Pumps.
28. Riveters.
29. Smithing equipment.

WATER UTILITY PLANT ACCOUNTS

30. Tool racks.
31. Vises.
32. Welding apparatus.
33. Work benches.

344. Laboratory Equipment

A. This account shall include the cost installed of laboratory equipment used for general laboratory purposes and not specifically provided for or includible in other departmental or functional plant accounts. A sample of items to be included in this account are listed below:

1. Autoclaves.
2. Barometers.
3. Cameras.
4. Centrifuge.
5. Distilling apparatus.
6. Furnaces.
7. Microscopes.
8. Ovens.
9. Pitometers.
10. Rain gauges.
11. Refrigerators.
12. Scales.
13. Sterilizers.
14. Stop watches.
15. Testing machines.
16. Thermometers.
17. Voltmeters.
18. Other bacteriological, electric, chemical hydraulic or research equipment.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

345. Power Operated Equipment

This account shall include the cost of power operated equipment used in construction of repair work exclusive of equipment includible in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted. A sample of items to be included in this account are listed below:

1. Air compressors, including driving unit and vehicle.
2. Back filling machines.
3. Boring machines.
4. Bulldozers.
5. Cranes and joists.

WATER UTILITY PLANT ACCOUNTS

6. Diggers.
7. Engines.
8. Pile drivers.
9. Pipe cleaning machines.
10. Pipe coating or wrapping machines.
11. Tractors -- Crawler type.
12. Trenchers.
13. Other power operated equipment.

Note:--It is intended that this account include only such large units as are generally self-propelled or mounted on moveable equipment.

346. Communication Equipment

This account shall include the cost installed of telephone, telegraph and wireless equipment for general use in connection with utility operations. A sample of items to be included in this account are listed below:

1. Antennae.
2. Booths.
3. Cables.
4. Distribution boards.
5. Extension cords.
6. Gongs.
7. Handsets, manual and dial.
8. Insulators.
9. Intercommunicating sets.
10. Loading coils.
11. Operators desks.
12. Poles and fixtures used wholly for telephone and telegraph wires.
13. Radio transmitting and receiving sets.
14. Remote control equipment and lines.
15. Sending keys.
16. Storage batteries.
17. Switchboards.
18. Teleautograph circuit connections.
19. Telegraph receiving sets.
20. Telephone and telegraph circuits.
21. Testing instruments.
22. Towers.
23. Underground conduit used wholly for telephone or telegraph wires and cable wires.

WATER UTILITY PLANT ACCOUNTS

347. Miscellaneous Equipment

This account shall include the cost of equipment, apparatus, etc., used in utility operations, and which is not includible in any other account. A sample of items to be included in this account are listed below:

1. Hospital and infirmary equipment.
2. Kitchen equipment.
3. Recreation equipment.
4. Radios.
5. Restaurant equipment.
6. Soda fountains.
7. Operator's cottage furnishings.
8. Electric signs advertising the corporate name or symbol, plant or facility name, or otherwise serving only the general purpose of acquainting the public with the facilities and services of the utility.
9. Other miscellaneous equipment.

Note:--Miscellaneous equipment of the nature indicated above wherever practicable shall be included in the utility plant accounts on a functional basis.

348. Other Tangible Plant

This account shall include the cost of tangible utility plant not provided for elsewhere.

§ 1329. Valuation of acquired water and wastewater systems.

(a) Process to establish fair market value of selling utility.--Upon agreement by both the acquiring public utility or entity and the selling utility, the following procedure shall be used to determine the fair market value of the selling utility:

- (1) The commission will maintain a list of utility valuation experts from which the acquiring public utility or entity and selling utility will choose.
- (2) Two utility valuation experts shall perform two separate appraisals of the selling utility for the purpose of establishing its fair market value.
- (3) Each utility valuation expert shall determine fair market value in compliance with the Uniform Standards of Professional Appraisal Practice, employing the cost, market and income approaches.
- (4) The acquiring public utility or entity and selling utility shall engage the services of the same licensed engineer to conduct an assessment of the tangible assets of the selling utility. The assessment shall be incorporated into the appraisal under the cost approach required under paragraph (3).
- (5) Each utility valuation expert shall provide the completed appraisal to the acquiring public utility or entity and selling utility within 90 days of execution of the service contract.

(b) Utility valuation experts.--

- (1) The utility valuation experts required under subsection (a) shall be selected as follows:
 - (i) one shall be selected by the acquiring public utility or entity; and
 - (ii) one shall be selected by the selling utility.
- (2) The utility valuation experts shall not:
 - (i) derive any material financial benefit from the sale of the selling utility other than fees for services rendered; or
 - (ii) be an immediate family member of a director, officer or employee of either the acquiring public utility, entity or selling utility within a 12-month period of the date of hire to perform an appraisal.
- (3) Fees paid to utility valuation experts may be included in the transaction and closing costs associated with acquisition by the acquiring utility or entity. Fees eligible for inclusion may be of an amount not exceeding 5% of the fair market value of the selling utility or a fee approved by the commission.

(c) Ratemaking rate base.--The following apply:

- (1) The ratemaking rate base of the selling utility shall be incorporated into the rate base of:
 - (i) the acquiring public utility during the acquiring public utility's next base rate case; or
 - (ii) the entity in its initial tariff filing.
- (2) The ratemaking rate base of the selling utility shall be the lesser of the purchase price negotiated by the acquiring public utility or entity and selling utility or the fair market value of the selling utility.

(d) Acquisitions by public utility.--The following apply:

- (1) If the acquiring public utility and selling utility agree to use the process outlined in subsection (a), the acquiring public utility shall include the following as an attachment to its application for commission approval of the acquisition filed pursuant to section 1102 (relating to enumeration of acts requiring certificate):
 - (i) Copies of the two appraisals performed by the utility valuation experts under subsection (a).

(ii) The purchase price of the selling utility as agreed to by the acquiring public utility and selling utility.

(iii) The ratemaking rate base determined pursuant to subsection (c)(2).

(iv) The transaction and closing costs incurred by the acquiring public utility that will be included in its rate base.

(v) A tariff containing a rate equal to the existing rates of the selling utility at the time of the acquisition and a rate stabilization plan, if applicable to the acquisition.

(2) The commission shall issue a final order on an application submitted under this section within six months of the filing date of an application meeting the requirements of subsection (d)(1).

(3) If the commission issues an order approving the application for acquisition, the order shall include:

(i) The ratemaking rate base of the selling utility, as determined under subsection (c)(2).

(ii) Additional conditions of approval as may be required by the commission.

(4) The tariff submitted pursuant to subsection (d)(1)(v) shall remain in effect until such time as new rates are approved for the acquiring public utility as the result of a base rate case proceeding before the commission. The acquiring public utility may collect a distribution system improvement charge during this time, as approved by the commission under this chapter.

(5) The selling utility's cost of service shall be incorporated into the revenue requirement of the acquiring public utility as part of the acquiring utility's next base rate case proceeding. The original source of funding for any part of the water or sewer assets of the selling utility shall not be relevant to determine the value of said assets.

(e) Acquisitions by entity.--An entity shall provide all the information required by subsection (d)(1) to the commission as an attachment to its application for a certificate of public convenience filed pursuant to section 1102.

(f) Postacquisition projects.--The following apply:

(1) An acquiring public utility's postacquisition improvements that are not included in a distribution improvement charge shall accrue allowance for funds used during construction after the date the cost was incurred until the asset has been in service for a period of four years or until the asset is included in the acquiring public utility's next base rate case, whichever is earlier.

(2) Depreciation on an acquiring public utility's postacquisition improvements that have not been included in the calculation of a distribution system improvement charge shall be deferred for book and ratemaking purposes.

(g) Definitions.--The following words and phrases when used in this section shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Acquiring public utility." A water or wastewater public utility subject to regulation under this title that is acquiring a selling utility as the result of a voluntary arm's-length transaction between the buyer and seller.

"Allowance of funds used during construction." An accounting practice that recognizes the capital costs, including debt and equity funds that are used to finance the construction costs of an improvement to a selling utility's assets by an acquiring public utility.

"Entity." A person, partnership or corporation that is acquiring a selling utility and has filed or whose affiliate has

filed an application with the commission seeking public utility status pursuant to section 1102.

"Fair market value." The average of the two utility valuation expert appraisals conducted under subsection (a)(2).

"Ratemaking rate base." The dollar value of a selling utility which, for postacquisition ratemaking purposes, is incorporated into the rate base of the acquiring public utility or entity.

"Rate stabilization plan." A plan that will hold rates constant or phase rates in over a period of time after the next base rate case.

"Selling utility." A water or wastewater company located in this Commonwealth, owned by a municipal corporation or authority that is being purchased by an acquiring public utility or entity as the result of a voluntary arm's-length transaction between the buyer and seller.

"Utility valuation expert." A person hired by an acquiring public utility and selling utility for the purpose of conducting an economic valuation of the selling utility to determine its fair market value.

(Apr. 14, 2016, P.L.76, No.12, eff. 60 days)

2016 Amendment. Act 12 added section 1329.

APPENDIX C

SUPPORTING DOCUMENTS

- **CONTRACT II - CONSTRUCTION OF 1.0MG KEHLY RUN STEEL RESERVOIR**
- **CONTRACT – CONSTRUCTION OF 12-INCH WATER TRANSMISSION MAIN FROM RAVEN RUN WTP TO COAL STREET**
- **CONTRACT IV – ELECTRICAL WORK RELATED TO THE CONSTRUCTION OF THE SHENANDOAH WTP**
- **LIMITED SCOPE VALUATION STUDY, DATED NOVEMBER 2016**
- **MAINTENANCE BUILDING PROPERTY INFORMATION**
- **PS #5 AND CARTAKEE HOUSE PROPERTY INFORMATION**
- **RAVEN RUN DAM #2 CONSTRUCTION INFORMATION**
- **RAVEN RUN DAM #3 CONSTRUCTION INFORMATION**
- **CONTRACT – REPAINT 0.5 MG SHENANDOAH HEIGHTS STANDPIPE**
- **RINGTOWN DAM #5 & #6 CONSTRUCTION INFORMATION**
- **WAREHOUSE BUILDING PROPERTY INFORMATION**

CONTRACT DOCUMENTS
FOR
CONTRACT II
CONSTRUCTION OF
THE 1.0 MILLION GALLON
KEHLY RUN STEEL RESERVOIR
FOR THE
MUNICIPAL AUTHORITY OF THE
BOROUGH OF SHENANDOAH
SHENANDOAH, PENNSYLVANIA

PROJECT NO. 26607

MAY 1990

GANNETT FLEMING, INC.
WATER RESOURCES AND GEOTECHNICAL DIVISION



HARRISBURG, PENNSYLVANIA

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that a CORPORATION known as _____

Johnston Construction Company

organized and existing under the laws of the State of Pennsylvania

A PARTNERSHIP, known as _____

consisting of the following members _____

AN INDIVIDUAL _____

trading as _____

of P. O. Box 98, 4331 Fox Run Road, Dover

in the State of Pennsylvania, hereinafter

called PRINCIPAL, and Reliance Insurance Company

of the City of Philadelphia, State of Pennsylvania

a corporation created and existing under the laws of the State of Pennsylvania

hereinafter called SURETY, are held and firmly bound unto the MUNICIPAL

AUTHORITY OF THE BOROUGH OF SHENANDOAH, SHENANDOAH, PENNSYLVANIA, and the

PENNSYLVANIA INFRASTRUCTURE INVESTMENT AUTHORITY, HARRISBURG, PENNSYLVANIA,

(Co-Obligee), as Obligee, in the full and just sum of Six Hundred Fourteen

Thousand Three Hundred Fifty Nine and ----- 00/100

Dollars (\$614,359.00 **), lawful money of the United States of America, for the payment of which sum we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

PROPOSAL

TO: MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH

FOR: CONSTRUCTION OF 12-INCH WATER TRANSMISSION MAIN FROM
PROPOSED RAVEN RUN WATER TREATMENT PLANT TO COAL STREET

Pursuant to and in compliance with the request for bids on the above-captioned work, the undersigned offers to furnish all labor, materials, supplies, equipment, plant and other facilities, utilities and all things necessary or proper for, and to perform all work necessary or incidental to the CONSTRUCTION OF 12-INCH WATER TRANSMISSION MAIN FROM PROPOSED RAVEN RUN WATER TREATMENT PLANT TO COAL STREET, complete in every respect, in strict accordance with the Contract Documents as defined in the Specifications and any future changes therein as provided in the Contract and Specifications, and to perform all other obligations imposed by the Contract for the prices named in the following schedule:

SCHEDULE OF PRICES

Item No.	Estimated Quantities	Item Description	Unit Price Dollars & Cents	Total Amount Dollars & Cents
1	Lump Sum	Mobilization and Demobilization		\$ <u>17,990.00</u>
2	296 C.Y.	Unclassified Excavation and Backfill with 2 RC	\$ <u>.01</u>	\$ <u>2.96</u>
3	5,979 C.Y.	Unclassified Excavation and Backfill with Approved Excavated Material	\$ <u>.01</u>	\$ <u>59.79</u>
4	75 C.Y.	Excavation of Unsuitable Material Below Planned Subgrade and Backfill with 2 RC	\$ <u>35.00</u>	\$ <u>2,625.00</u>
5	1,130 L.F.	Furnish and Install 16" Ductile Iron Water Main	\$ <u>43.30</u>	\$ <u>48,929.00</u>

SCHEDULE OF PRICES (Cont'd)

Item No.	Estimated Quantities	Item Description	Unit Price Dollars & Cents	Total Amount Dollars & Cents
6	6,872 L.F.	Furnish and Install 12" Ductile Iron Water Main	\$ <u>27.00</u>	\$ <u>185,544.00</u>
7	1 Each	Furnish and Install 16" Butterfly Valve	\$ <u>2,150.00</u>	\$ <u>2,150.00</u>
8	6 Each	Furnish and Install 12" Gate Valve	\$ <u>925.00</u>	\$ <u>5,550.00</u>
9	1 Each	Furnish and Install 12" Tapping Sleeve and Valve, Complete	\$ <u>4,135.00</u>	\$ <u>4,135.00</u>
10	6 Each	Furnish and Install Blowoff/Air Release Hydrant	\$ <u>985.00</u>	\$ <u>5,910.00</u>
11	Lum Sum	Furnish and Install 8" Blow-off at Station 31+47, Complete	\$ <u>1,600.00</u>	\$ <u>1,600.00</u>
12	127 S.Y.	Temporary Pavement Replacment	\$ <u>6.00</u>	\$ <u>762.00</u>
13	203 S.Y.	Permanent Pavement Replacement	\$ <u>24.20</u>	\$ <u>4,912.60</u>
14	Lump Sum	Modification and Stabilization of Existing Access Road, Complete		\$ <u>5,510.00</u>
15	Lump Sum	Clearing & Grubbing		\$ <u>10,650.00</u>
16	50 L.F.	Installation of Stream Crossing Concrete Encase- ments	\$ <u>65.50</u>	\$ <u>3,275.00</u>

Gonnett Fleming

SCHEDULE OF PRICES (Cont'd)

Item No.	Estimated Quantities	Item Description	Unit Price Dollars & Cents	Total Amount Dollars & Cents
17	20 L.F.	Installation of Concrete Encasement of Existing 12" Water Main	\$ <u>65.50</u>	\$ <u>1,310.00</u>
18	Lump Sum	Furnish and Install Precast Meter/PRV Chamber, Complete		\$ <u>53,705.00</u>
19	6,800 L.F.	Finished Grading and Seeding	\$ <u>1.00</u>	\$ <u>6,800.00</u>
20	3 Ea.	Furnish and Install Access Road Gates	\$ <u>1,870.00</u>	\$ <u>5,610.00</u>
21	80 L.F.	Furnish and Install 8" Corrugated Drain Pipe	\$ <u>23.20</u>	\$ <u>1,856.00</u>
22	Lump Sum	Furnish and Install Catch Basin and Corrugated Drain Pipe		\$ <u>2,150.00</u>
23	Lump Sum	Furnish and Install ACCMP Arch Cross Drain and Catch Basin at Station 73+25		\$ <u>2,330.00</u>
24	Lump Sum	Connection at Station 0+00, Complete		\$ <u>12,830.00</u>
25	Lump Sum	Connection at Station 19+37, Complete		\$ <u>5,000.00</u>
26	Lump Sum	Connection at Station 68+28, Complete		\$ <u>6,440.00</u>

SCHEDULE OF PRICES (Cont'd)

Item No.	Estimated Quantities	Item Description	Unit Price Dollars & Cents	Total Amount Dollars & Cents
27	Lump Sum	Disconnection of Existing Water Main at Belmont Avenue and Coal Street		\$ 2,350.00
TOTAL BID - ITEMS 1 THROUGH 27, INCLUSIVE			\$ 399,986.35	

RF
7/26

Receipt of the following addenda is hereby acknowledged:

Addendum No. 1 Date Received: 7/10/90
 Addendum No. 2 Date Received: 7/24/90
 Addendum No. _____ Date Received: _____

The presentation in the foregoing schedule of unit prices that are obviously unbalanced may be sufficient cause for rejection of the entire Proposal whether or not such Proposal is the lowest submitted.

Other additional and extra work, if any, performed in accordance with the Contract shall be paid for as provided in the Specifications.

The Specifications and all papers required thereof and submitted herewith, the Contract and all papers made part thereof by its terms, are hereby made part of this Proposal.

The undersigned Bidder hereby represents as follows:

- (1) That he has visited and examined the site of the work, and has carefully examined the Proposal, the Contract, the Drawings, and the Specifications;
- (2) That no officer, agent, or employee of the OWNER is personally interested, directly or indirectly, in this Proposal and accompanying Contract or the compensation to be paid hereunder;
- (3) That this Proposal is made without connection with any person, firm, or corporation making a Proposal for the same work, and is, in all respects, fair and without collusion or fraud; and

17. How will the project improve the ability of the water supply system to come into compliance with State and Federal statutes, regulations, and standards? Is the project compatible with the State Water Plan, other State and regional resources management and economic development plans? If not, comment.

The referenced construction projects provide new construction and remedial work projects to satisfy the Consent Decree requirements for compliance with the Dam Safety Act and the Consent order and Agreement with the Department of Environmental Resources.

18. What physical components comprise the recommended project? Describe in detail. Include a description of any existing facilities to be upgraded or rehabilitated. Include cost estimate for each major item of construction.

<u>Component</u>	<u>Estimated Cost</u>
<u>1.0 Million Gallon Steel Reservoir</u>	<u>\$ 500,000</u>
<u>± 8050 feet of 12" Ductile Iron Transmission Main</u>	<u>440,000</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
Total Construction Cost	<u>\$ 940,000</u>

19. How much will the project cost?

	<u>Total Project Cost</u>	<u>PIA Financial Assistance Request</u>
Administration	<u>\$ 10,000</u>	<u>\$ 10,000</u>
Legal Fees	<u>20,000</u>	<u>20,000</u>
Financial Accounting Costs	<u> </u>	<u> </u>
Interest During Construction	<u>30,000</u>	<u>30,000</u>
A/E Fees	<u>51,000</u>	<u>51,000</u>
Permits	<u> </u>	<u> </u>
Land	<u> </u>	<u> </u>
Construction (From Question 14)	<u>940,000</u>	<u>940,000</u>
Contingency	<u> </u>	<u> </u>
Other (specify)	<u> </u>	<u> </u>
Total	<u>\$ 1,051,000</u>	<u>\$ 1,051,000</u>

SILICON POWER CONTROLS, INC.

334 NORTH SECOND ST.

PO BOX G

FRACKVILLE, PA 17931

2

**CONTRACT IV - ELECTRICAL WORK RELATED
TO THE CONSTRUCTION OF THE
SHENANDOAH WATER TREATMENT PLANT**

FOR THE

**MUNICIPAL AUTHORITY OF
THE BOROUGH OF SHENANDOAH
SHENANDOAH, PENNSYLVANIA**

JULY 1992

PROJECT 26607

**GANNETT FLEMING, INC.
WATER RESOURCES AND GEOTECHNICAL DIVISION**

HARRISBURG, PENNSYLVANIA

CONTRACT DOCUMENTS

FOR

CONTRACT IV - ELECTRICAL WORK RELATED
TO THE CONSTRUCTION OF THE
SHENANDOAH WATER TREATMENT PLANT

FOR THE

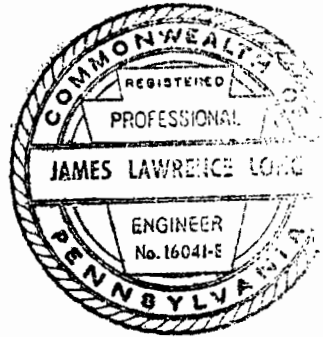
MUNICIPAL AUTHORITY OF
THE BOROUGH OF SHENANDOAH
SHENANDOAH, PENNSYLVANIA



7/14/92

JULY 1992

PROJECT 26607



James Lawrence Long
July 14, 1992

GANNETT FLEMING, INC.
WATER RESOURCES AND GEOTECHNICAL DIVISION
HARRISBURG, PENNSYLVANIA

PROPOSAL

TO: MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH
SHENANDOAH, PENNSYLVANIA

FOR: CONTRACT IV - ELECTRICAL WORK RELATED TO THE CONSTRUCTION OF THE
SHENANDOAH WATER TREATMENT PLANT

Pursuant to and in compliance with the request for bids on the above-captioned work, the undersigned offers to furnish all labor, materials, supplies, equipment, plant and other facilities, utilities and all things necessary or proper for, and to perform all work necessary or incidental to CONTRACT IV - ELECTRICAL WORK RELATED TO THE CONSTRUCTION OF THE SHENANDOAH WATER TREATMENT PLANT complete in every respect, in strict accordance with the Contract Documents as defined in the Specifications and any future changes therein as provided in the Contract Drawings and Specifications, and to perform all other obligations imposed by the Contract for the lump sum price listed below:

Six Hundred Sixty Seven Thousand Five Hundred Seventy Five Dollars
and *ZERO* Cents (*\$667,575.00*)

BASE BID MANUFACTURERS OF MAJOR MATERIALS AND EQUIPMENT		
A. ELECTRICAL		
1.	Emergency Generator Set	<i>Onan</i>
2.	Panelboards	<i>Square D</i>
3.	Transformers	<i>Square D</i>
4.	Motor Starters	<i>Square D</i>
5.	Transient Voltage Surge Protection Equipment	<i>Leviton</i>

Gannett Fleming

SUPPLEMENTAL UNIT PRICES

Supplemental unit prices shall be used during construction if the quantities defined within limits set by the Specifications and shown on the Drawings are increased or decreased by the Engineer in a manner defined hereinabove in the Information for Bidders. All labor, material, tools, equipment, and work involved in each unit of work shall be in accordance with the governing sections and Articles of these Specifications.

SCHEDULE OF SUPPLEMENTAL UNIT PRICES
FOR ADDITIONS, DEDUCTIONS, OR DELETIONS IN CONTRACT QUANTITIES

<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>
Conduit Trench Excavation - Earth (Includes Backfill)	Cu. Yd.	\$ <u>25.00</u>
Conduit Trench Excavation - Rock (Includes Backfill)	Cu. Yd.	\$ <u>175.00</u>
Conduit Trench Excavation - Unsuitable Material (Includes Backfill)	Cu. Yd.	\$ <u>30.00</u>
Class B Concrete Encasement (For Conduit) (All Structures)	Cu. Yd.	\$ <u>69.00</u>
3/4" Rigid Galvanized Steel Conduit	Ln. Ft.	\$ <u>3.10</u>
1" Rigid Galvanized Steel Conduit	Ln. Ft.	\$ <u>3.90</u>
3/4" PVC Coated Rigid Galvanized Steel Conduit	Ln. Ft.	\$ <u>4.30</u>
1" PVC Conduit	Ln. Ft.	\$ <u>1.70</u>
2" PVC Conduit	Ln. Ft.	\$ <u>2.80</u>
3" PVC Conduit	Ln. Ft.	\$ <u>3.90</u>
2C #18 Shielded Twisted Cable	Ln. Ft.	\$ <u>1.20</u>
#12 Copper AWG Conductor THWN	Ln. Ft.	\$ <u>.35</u>
#12 Copper AWG Conductor THHN	Ln. Ft.	\$ <u>.35</u>
Terminate 2C #18 Cable	Ea. End	\$ <u>1.70</u>
Terminate #12 Conductor	Ea. End	\$ <u>1.20</u>

SUBSTITUTED ITEMS

1. Proposal Item No. _____
 - (a) Specified equipment to be substituted:

 - (b) Specified Manufacturer: _____
Total Bid Price of Proposal Item No. _____ \$ _____ *
 - (c) Substituted Manufacturer: _____
Total Alternate Price of Proposal Item No. _____ \$ _____

2. Proposal Item No. _____
 - (a) Specified equipment to be substituted:

 - (b) Specified Manufacturer: _____
Total Bid Price of Proposal Item No. _____ \$ _____ *
 - (c) Substituted Manufacturer: _____
Total Alternate Price of Proposal Item No. _____ \$ _____

3. Proposal Item No. _____
 - (a) Specified equipment to be substituted:

 - (b) Specified Manufacturer: _____
Total Bid Price of Proposal Item No. _____ \$ _____ *
 - (c) Substituted Manufacturer: _____
Total Alternate Price of Proposal Item No. _____ \$ _____

* This price shall be identical to the price shown in the Proposal for the same item number.

(ATTACH ADDITIONAL SHEETS OF SAME FORMAT IF REQUIRED)

Gannett Fleming

Receipt of the following addenda is hereby acknowledged:

Addendum No. <u>1</u>	Date Received: <u>Aug. 6, 1992</u>
Addendum No. _____	Date Received: _____
Addendum No. _____	Date Received: _____
Addendum No. _____	Date Received: _____

The presentation in the foregoing schedule of unit prices that are obviously unbalanced may be sufficient cause for rejection of the entire Proposal whether or not such Proposal is the lowest submitted.

Other additional and extra work, if any, performed in accordance with the Contract shall be paid for as provided in the Specifications.

The Specifications and all papers required thereof and submitted herewith, the Contract and all papers made part thereof by its terms, are hereby made part of this Proposal.

The undersigned Bidder hereby represents as follows:

(a) That he has visited and examined the site of the work, and has carefully examined the Proposal, the Contract, the Drawings, and the Specifications;

(b) that no officer, agent, or employee of the MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH is personally interested, directly or indirectly, in this Proposal and accompanying Contract or the compensation to be paid hereunder;

(c) that this Proposal is made without connection with any person, firm, or corporation making a Proposal for the same work, and is, in all respects, fair and without collusion or fraud; and

(d) that should this Proposal, including any combination of alternates, additions, deductions or omissions indicated or authorized by the Schedule of Prices be accepted by the MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAN within 60 days of the opening of bids, he will execute the Contract and furnish the properly executed bonds and insurance certificates within the time and in the forms and amount required by the Contract Documents as defined in the Specifications; and that upon his failure, neglect, or refusal to do so, he shall forfeit to the Owner the Proposal Security accompanying this Proposal, not as a penalty, but as liquidated damages.

Gannett Fleming

ATTEST:

Date AUG 14, 1992

SILICON POWER CONTROLS, INC.
Corporation Contractor

Julia Chowansky
Secretary

VICE C. J. [Signature] (AFFIX
President CORPORATE
SEAL)

WITNESS

Individual-Contractor (SEAL)

WITNESS

Partnership-Contractor

By Partner (SEAL)

Partner (SEAL)

Business Address of Bidder

**MUNICIPAL AUTHORITY OF SHENANDOAH
BOROUGH WATER SYSTEM**

LIMITED SCOPE VALUATION STUDY

PRESENTED

TO

THE PENNSYLVANIA ECONOMY LEAGUE

CENTRAL PA LLC

88 NORTH FRANKLIN STREET, SUITE 200

WILKES BARRE, PA 18701-1393

SHAMBAUGH UTILITY CONSULTING, LLC

1260 MOUNTAIN VIEW ROAD

SHERMANS DALE, PA 17090

PHONE: 717-991-4180

NOVEMBER 2016

November 4, 2016

Mr. Gerald Cross, Executive Director
Pennsylvania Economy League, Central PA LLC
88 North Franklin Street, Suite 200
Wilkes-Barre, PA 18701-1393

Re: Municipal Authority of Shenandoah
Borough Water System –
Limited Scope Valuation Study

Dear Mr. Cross:

Per your authorization, Shambaugh Utility Consulting, LLC has completed a limited scope valuation study of the Municipal Authority of Shenandoah Borough Water System (the "Authority"). Shambaugh Consulting understands that this study is a continuation of the efforts on behalf of The Pennsylvania Economy League Central PA LLC with respect to the long term financial viability of the Authority's water system.

A fair market valuation for a utility system is typically determined by three (3) approaches, namely income, cost and market. For our limited scope study, we have determined the depreciated original costs of the fixed utility assets (cost approach), the anticipated value from the perspective of an investor owned water and sewer company (market approach) and have performed a review of the current and projected net income or loss of the Authority (income approach).

Cost Approach

The cost approach typically begins with the development of the depreciated original costs values of the fixed capital utility assets as the basis of the valuation determinations under this approach. Shambaugh consulting obtained fixed asset data from the Authority's auditor which provided limited details with respect to the type or condition of the assets. We adjusted the Authority's life expectancies of the asset categories and recalculated the annual and accrued depreciation on an age/life basis

utilizing the mid-year convention as the in-service date for all the assets. This is the typical approach utilized in the utility industry. The results of the detailed calculations are contained in Supporting Schedule No. 1. Based upon our revised calculations, the Authority's depreciated utility plant in service at December 31, 2015 amounts to \$14,007,494 as compared to the book calculation of \$11,929,634. Shambaugh Consulting lengthened several of the per book life expectancies of the utility plant assets based upon our experience in water plant depreciation. This information provides the basis, or the book value, for the next steps in developing the cost approach valuation of the Authority's fixed capital assets.

It is important to determine the current value of the fixed capital assets or the value of those assets at today's costs. Shambaugh Consulting employed a Reproduction Cost New Less Depreciation (RCNLD) Methodology in estimating the cost of reproducing the identical property at a price level at December 31, 2015. To accomplish this task, a process of trending the original cost of the fixed capital assets by the ratio of the appropriate cost indexes for the two-time periods concerned, the original installation date and the study date, was employed. We utilized the Handy-Whitman Trends of Construction Costs in developing the appropriate indexes for the North Atlantic Region.

The results of the trended original cost analysis indicate that the Authority's fixed capital assets have an undepreciated value of \$48,653,801 which includes land, intangibles and small equipment and tools that were included at their original cost values and not trended for this study. The detailed calculations of the trended original costs are set forth on Supporting Schedule No. 2.

It is necessary to depreciate the trended original costs to develop the value of those assets as of the study date of December 31, 2015. We employed the same life expectancies as set forth in developing the depreciated original costs at December 31, 2015. Based upon our calculations of the asset information provided, the RCNLD calculations produces a depreciated value of the fixed capital assets of \$33,327,648 at December 31, 2015. Shambaugh Consulting did not, during the course of this study, perform any due diligence with respect to the condition of the fixed capital assets or assess any cost to cure for deficient or failing assets. This aspect of the valuation process will be addressed later in this report.

Market Approach

It is important to note that a market approach would employ market comparable sales of similar utility systems. In the utility industry, there are no two utility systems that are exactly alike in customer base, operations, service territory, financing structure capital investment, and provide service under the same economic conditions. Any reliance solely on a sale price of another water system is not advisable. For the purpose of this study, we will provide a range of values per customer connection and have performed an analysis of the market to book ratios of investor owned water utilities as a barometer with respect to a potential investor's willingness to invest in the Authority's water system and at what cost.

The Authority has approximately 3,000 residential and commercial customers located in the Shenandoah Borough and in the surrounding municipalities of Schuylkill County. Water systems usually command a cost per connection or meter equivalency of at least \$1,000 per connection and have realized purchase prices per meter equivalency of \$2,500 or higher. The Authority has a very unusual situation in that the fixed capital investment per customer is approximately \$4,700 per customer resulting from the restatement of the book value at December 31, 2015. This is a significant investment per customer that has resulted in the uncertainty of the future long term viability of the water system.

Investor owned utilities will typically base their offer to purchase on a reasonable market to book ratio of their common stock sales with considerations of the profitability of the system to be acquired. In recent times, publicly traded water companies average market to book values have exceeded a factor of 2.47 times. This has been the case for the two largest investor owned water systems operating in Pennsylvania. However, the Authority has some operating difficulties that will likely limit the offers to purchase and those issues will be discussed later in this report. Shambaugh Consulting has utilized a conservative approach and adopted a market to book ratio of 1.5 times. Therefore, the Authority's indicated value from a market approach would be approximately \$21 million ($\$14,007,494 \times 1.5$) before any consideration of the affordability of the future rates necessary to support the purchase price or the amount of investment necessary to repair or replace the existing facilities.

INCOME APPROACH

Shambaugh Consulting was provided with a copy of Aurel M. Arndt's report which sets forth the current and projected financial condition of the Authority for fiscal years' 2015 through 2020. The primary result of that analysis is that the Authority will accumulate operating losses for the period of approximately \$866,320. The Authority must increase existing rates significantly over the next five to ten years to avoid significant operating losses and provide for fixed capital investments. Based upon our review of Mr. Arndt's report, Shambaugh Consulting would agree with the findings of that report. However, that report clearly indicates that the current rates are high in comparison to similar systems and that any increase to those rates may create an affordability issue for many of the Authority's customers. Mr. Arndt indicates in his report that along with a steady decline in the Authority's customer base approximately 30% of the households in Shenandoah are below the poverty level.

Therefore, any pro forma increase to the existing customer rates would not generate any sizable future income streams that would be available for capitalization or produce a value from an income approach.

CONCLUSIONS OF VALUE

Shambaugh Consulting conclusions of value of the Authority's water system would range between the book value of \$14,007,494 and the market to book value of \$21,011,241. Shambaugh Consulting has not discounted these values for the condition of the assets or the poor financial condition of the water system for the following reasons:

Condition of the Assets / Current Financial Condition

Shambaugh Consulting did not perform any due diligence regarding the condition of the assets for this limited scope valuation study. Mr. Arndt set forth an estimate of capital investment of over \$30 million for capital investment. A cost to cure adjustment of \$30 million to the Reproduction Cost New Less Depreciation value of approximately \$33.3 million would reduce the water system's value to a range of \$3.3 million. However, investor's may consider the water system's fixed capital needs as an

Gerald Cross, Executive Director
November 4, 2016
Page 5

opportunity for investment if they have an opportunity to earn a return and recover their investment through customers' rates.

An investor owned utility in Pennsylvania can, by law, aggregate future operating and capital costs of the authority to a larger customer base that would include all their water **and** sewer customers in Pennsylvania. This may be the solution for the Authority to preserve some value for their water system and provide reasonable rates for their residents.

Shambaugh Consulting conclusions are based upon information provided by the Authority and cannot reflect the market reaction to the potential sale of the Authority's water system. We appreciate the opportunity to provide our services to The Pennsylvania Economy League Central PA LLC and would welcome the opportunity to discuss our report.

Respectfully Submitted,
Shambaugh Consulting, LLC



By: Gary D. Shambaugh
Managing Principal

**MUNICIPAL AUTHORITY OF SHENANDOAH
BOROUGH WATER SYSTEM**

LIMITED SCOPE VALUATION STUDY

Supporting Schedule No. 1

SHAMBAUGH UTILITY CONSULTING, LLC

**1260 MOUNTAIN VIEW ROAD
SHERMANS DALE, PA 17090
PHONE: 717-991-4180**

NOVEMBER 2016

Municipal Authority of the Borough of Shenandoah
Annual and Accrued Depreciation of Utility Plant In Service
At December 31, 2015

	Year					Annual	Accrued	Depreciated	
	Installed	Method	Life	Cost	Age	Depreciation	Depreciation	Original Cost	
						Expense	12/31/2015	12/31/2015	
System Upgrade:									
PD	Meters, Mains, Service Lines	2006	SL	75	\$ 19,345.14	9.5	\$257.94	\$2,450	\$16,895
PD	Meters, Mains, Service Lines	2007	SL	75	32,020.76	8.5	426.94	3,629	28,392
PD	Meters, Mains, Service Lines	2008	SL	75	20,884.05	7.5	278.45	2,088	18,796
PD	Meters, Mains, Service Lines	2009	SL	75	2,591.99	6.5	34.56	225	2,367
PD	Meters, Mains, Service Lines	2010	SL	75	7,125.94	5.5	95.01	523	6,603
PD	Plant Upgrade	2012	SL	75	663,361.82	3.5	8,844.82	30,957	632,405
PD	Plant System Support Software Upgrade	2013	SL	10	4,866.00	2.5	486.60	1,217	3,649
PD	HMI Upgrade on SCADA System	2014	SL	10	16,500.00	1.5	1,650.00	2,475	14,025
	Total				\$ 766,695.70		\$12,074.32	\$43,564	\$723,132
Water Collection & Purification:									
WC	Kehly Run Dam breach repairs	2008	SL	80	\$ 160,143.70	7.5	\$2,001.80	\$15,014	\$145,130
WC	Permanent Repairs Reservoir #5	2009	SL	80	75,091.67	6.5	938.65	6,101	68,991
WC	Water System Improvements - Eng.	2009	SL	75	61,577.96	6.5	821.04	5,337	56,241
WC	Raven Run III Reservoir Repairs	2012	SL	80	27,750.00	3.5	346.88	1,214	26,536
WC	Pump Stations #5 Roof Repairs	2012	SL	20	11,430.00	3.5	571.50	2,000	9,430
WC	Pump for Reservoir #5	2015	SL	25	88,890.96	0.5	3,555.64	1,778	87,113
	Total				\$ 424,884.29		\$8,235.51	\$31,444	\$393,440
Water Treatment Plant:									
WP	Equipment	2009	SL	30	\$ 19,787.82	6.5	\$659.59	\$4,287	\$15,501
WP	Lighting Fixtures	2013	SL	15	8,333.61	2.5	555.57	1,389	6,945
	Total				\$ 28,121.43		\$1,215.16	\$5,676	\$22,446
Equipment:									
PD	Meter Equipment	2006	SL	15	\$ 21,795.18	9.5	\$1,453.01	\$13,804	\$7,991
PD	Meter Equipment	2007	SL	15	1,785.08	8.5	119.01	1,012	773
PD	Tools	2007	SL	10	2,069.95	8.5	207.00	1,760	310

**Municipal Authority of the Borough of Shenandoah
Annual and Accrued Depreciation of Utility Plant In service
At December 31, 2015**

Fixed Capital Assets Placed into Service Prior to October 1, 2006

Description	Original Cost 12/31/2015	Year Installed	Life	Age	Annual Depreciation Expense	Accrued Depreciation 12/31/2015	Depreciated Original Cost 12/31/2015
L Misc. Intangible Plant	\$ 85,139.00				\$0.00	\$0	\$85,139
WC Engineering Fees - Dam	1,654,315.46	1992	80	23.5	20,678.94	485,955	1,168,360
L Land	144,751.20				0.00	0	144,751
CI Financing Cost	556,648.30	1992	80	23.5	6,958.10	163,515	393,133
WP Bldg & Structures	500,521.50	1982	75	33.5	6,673.62	223,566	276,956
WC Collect & Reservoirs	3,289,993.37	1981	100	34.5	32,899.93	1,135,048	2,154,945
WC Filtration Plant	7,647,991.75	2004	75	11.5	101,973.22	1,172,692	6,475,300
PD Wells & Springs	1,935.00	1987	50	28.5	38.70	1,103	832
PD Pumping Equipment	195,068.93				0.00	0	195,069
PD Water Treatment Equipment	204,537.90	1988	45	27.5	4,545.29	124,995	79,543
PD Dist Res & Standpipes	1,113,598.44	1987	75	28.5	14,847.98	423,167	690,431
PD Mains	1,277,622.35	1973	100	42.5	12,776.22	542,989	734,633
PD Services	588,514.14	1985	65	30.5	9,054.06	276,149	312,365
PD Meters	451,964.97	1992	35	23.5	12,913.28	303,462	148,503
PD Hydrants	150,635.58	1992	75	23.5	2,008.47	47,199	103,437
OFF Office Furn & Equip	72,766.12				0.00	72,766	0
TE Trans Equip	170,576.01				0.00	170,576	0
TE Ptools Shop & Equip	130,641.81				0.00	130,642	0
CE Comm Equip	33,958.59				0.00	33,959	0
TE Other Equip	5,398.07	1998	25	17.5	215.92	3,779	1,619
Total	\$ 18,276,578.49				\$ 225,583.73	\$5,311,562	\$ 12,965,016.00

**MUNICIPAL AUTHORITY OF SHENANDOAH
BOROUGH WATER SYSTEM**

LIMITED SCOPE VALUATION STUDY

Supporting Schedule No. 2

SHAMBAUGH UTILITY CONSULTING, LLC

**1260 MOUNTAIN VIEW ROAD
SHERMANS DALE, PA 17090
PHONE: 717-991-4180**

NOVEMBER 2016

Municipal Authority of the Borough of Shenandoah
Annual and Accrued Depreciation of Utility Plant In Service
At December 31, 2015

Reproduction Cost New Less Depreciation

Trended Depreciated Original Costs

	Year	Method	Life	Cost	Age	Annual	Accrued	Depreciated	Line No.	Handy-Whitman Trend Factors	Trended	Trended	Depreciated	
						Depreciation Expense	Depreciation 12/31/2015	Original Cost 12/31/2015			Original Costs	Accrued Depreciation	Trended Original Costs	
System Upgrade:														
PD	Meters, Mains, Service Lines	2006	SL	75	\$ 19,345.14	9.5	\$257.94	\$2,450	\$16,895	34	1.4970	\$ 28,960	\$ 3,668	\$ 25,292
PD	Meters, Mains, Service Lines	2007	SL	75	32,020.76	8.5	426.94	3,629	28,392	34	1.4094	45,130	5,115	40,015
PD	Meters, Mains, Service Lines	2008	SL	75	20,884.05	7.5	278.45	2,088	18,796	34	1.2704	26,531	2,653	23,878
PD	Meters, Mains, Service Lines	2009	SL	75	2,591.99	6.5	34.56	225	2,367	34	1.2166	3,153	274	2,879
PD	Meters, Mains, Service Lines	2010	SL	75	7,125.94	5.5	95.01	523	6,603	34	1.1933	8,503	624	7,879
PD	Plant Upgrade	2012	SL	75	663,361.82	3.5	8,844.82	30,957	632,405	17	1.1434	758,488	35,396	723,092
PD	Plant System Support Software Upgrade	2013	SL	10	4,866.00	2.5	486.60	1,217	3,649	17	1.1024	5,364	1,342	4,022
PD	HMI Upgrade on SCADA System	2014	SL	10	16,500.00	1.5	1,650.00	2,475	14,025	17	1.0564	17,431	2,615	14,816
Total					\$ 766,696.70		\$12,074.32	\$43,564	\$723,132			\$ 893,560	\$ 51,687	\$841,873
Water Collection & Purification:														
WC	Kehly Run Dam breach repairs	2008	SL	80	\$ 160,143.70	7.5	\$2,001.80	\$15,014	\$145,130	2	1.1312	\$ 181,155	\$ 16,984	\$ 164,171
WC	Permanent Repairs Reservoir #5	2009	SL	80	75,091.67	6.5	938.65	6,101	68,991	2	1.1215	84,215	6,842	77,373
WC	Water System Improvements - Eng.	2009	SL	75	61,577.96	6.5	821.04	5,337	56,241	2	1.1215	69,060	5,985	63,075
WC	Raven Run III Reservoir Repairs	2012	SL	80	27,750.00	3.5	346.88	1,214	26,536	2	1.0457	29,018	1,269	27,749
WC	Pump Stations #5 Roof Repairs	2012	SL	20	11,430.00	3.5	571.50	2,000	9,430	9	1.2563	14,360	2,513	11,847
WC	Pump for Reservoir #5	2015	SL	25	88,890.96	0.5	3,555.64	1,778	87,113	9	1.0476	93,122	1,863	91,259
Total					\$ 424,884.29		\$8,235.51	\$31,444	\$393,440			\$ 470,930	\$ 35,456	\$435,474
Water Treatment Plant:														
WP	Equipment	2009	SL	30	\$ 19,787.82	6.5	\$659.59	\$4,287	\$15,501	17	1.2793	\$ 25,315	\$ 5,484	\$ 19,831
WP	Lighting Fixtures	2013	SL	15	8,333.61	2.5	555.57	1,389	6,945	17	1.1024	9,187	1,531	7,656
Total					\$ 28,121.43		\$1,215.16	\$5,676	\$22,446			\$ 34,502	\$ 7,015	\$ 27,487
Equipment:														
PD	Meter Equipment	2006	SL	15	\$ 21,795.18	9.5	\$1,453.01	\$13,804	\$7,991	40	1.6250	\$ 35,417	\$ 22,432	\$ 12,985
PD	Meter Equipment	2007	SL	15	1,785.08	8.5	119.01	1,012	773	40	1.3945	2,489	1,411	1,078
PD	Tools	2007	SL	10	2,069.95	8.5	207.00	1,760	310	Unity	1.0000	2,070	1,760	310
PD	Plant Equipment	2008	SL	10	38,500.00	7.5	3,850.00	28,875	9,625	17	1.3688	52,699	39,524	13,175
PD	Lawn Tractor	2008	SL	10	3,019.99	7.5	302.00	2,265	755	Unity	1.0000	3,020	2,265	755
PD	Tools & Equipment	2009	SL	10	12,672.98	6.5	1,267.30	8,237	4,436	Unity	1.0000	12,673	8,237	4,436
PD	Water Storage Tanks Repairs	2009	SL	10	7,630.00	6.5	763.00	4,960	2,670	17	1.2793	9,761	6,345	3,416
PD	Tools & Equipment	2010	SL	10	2,027.67	5.5	202.77	1,115	913	Unity	1.0000	2,028	1,115	913
PD	Commercial Lawn Mower	2010	SL	10	8,520.00	5.5	852.00	4,686	3,834	Unity	1.0000	8,520	4,686	3,834
PD	Wacker Generator	2010	SL	10	2,200.00	5.5	220.00	1,210	990	Unity	1.0000	2,200	1,210	990
PD	Actuator	2011	SL	10	4,777.00	4.5	477.70	2,150	2,627	17	1.1992	5,729	2,578	3,151
PD	Permanent Electrical Repairs	2011	SL	10	10,695.00	4.5	1,069.50	4,813	5,882	17	1.1992	12,825	5,772	7,053
PD	Actuator	2013	SL	10	6,567.50	2.5	656.75	1,642	4,926	17	1.1024	7,240	1,810	5,430
PD	Actuator	2013	SL	10	6,567.50	2.5	656.75	1,642	4,926	17	1.1024	7,240	1,810	5,430
PD	Wacker	2015	SL	10	2,541.25	0.5	254.13	127	2,414	17	1.0214	2,596	130	2,466
PD	Actuator	2015	SL	10	5,546.28	0.5	554.63	277	5,269	17	1.0214	5,665	283	5,382
Total					\$ 136,915.38		\$ 12,905.55	\$ 78,575	\$ 58,341			\$ 172,172	\$ 101,368	\$70,804

Transportation Equipment:														
TE	2007 Silverado Dump Truck	2007	SL	10	\$ 31,075.00	8.5	\$3,107.50	\$26,414	\$4,661	Unity	1.0000	\$ 31,075	\$ 26,414	\$ 4,661
TE	Plow Installed on Dump Truck	2008	SL	10	4,430.10	7.5	443.01	3,323	1,107	Unity	1.0000	4,430	3,323	1,107
TE	2009 Ford F150 Truck	2009	SL	10	21,844.22	6.5	2,184.42	14,199	7,645	Unity	1.0000	21,844	14,199	7,645
TE	1985 Chevy 4-Wheel Drive Diesel	2009	SL	10	2,250.00	6.5	225.00	1,463	787	Unity	1.0000	2,250	1,463	787
TE	2010 Ford F150 Truck	2010	SL	10	22,825.00	5.5	2,282.50	12,554	10,271	Unity	1.0000	22,825	12,554	10,271
TE	2011 Ford Ranger Truck	2010	SL	10	21,036.62	5.5	2,103.66	11,570	9,467	Unity	1.0000	21,037	11,570	9,467
Total					\$ 103,460.94		\$ 10,346.09	\$ 69,523	\$ 33,938			\$ 103,461	\$ 69,523	\$ 33,938
Office Furniture & Equipment:														
OFF	KM2550 Kyocera Copier	2007	SL	10	\$ 2,789.00	8.5	\$278.90	\$2,371	\$418	Unity	1.0000	\$2,789	\$ 2,371	\$ 418
OFF	Various Office Equipment	2008	SL	15	1,533.75	7.5	102.25	767	767	Unity	1.0000	1,534	767	767
OFF	Security System	2009	SL	10	4,920.97	6.5	492.10	3,199	1,722	Unity	1.0000	4,921	3,199	1,722
OFF	4 Camera System w/ DVR (#5 house)	2010	SL	10	1,995.00	5.5	199.50	1,097	898	Unity	1.0000	1,995	1,097	898
OFF	4 Camera System w/ DVR (garage)	2011	SL	10	1,995.00	4.5	199.50	898	1,097	Unity	1.0000	1,995	898	1,097
OFF	APC Smart-UPS 5000VA Tower Battery	2012	SL	5	4,495.00	3.5	899.00	3,147	1,348	Unity	1.0000	4,495	3,147	1,348
Total					\$ 17,728.72		\$ 2,171.25	\$ 11,479	\$ 6,250			\$ 17,729	\$ 11,479	\$ 6,250
Total					\$ 1,477,806.46		\$ 46,947.88	\$ 240,261	\$ 1,237,547			\$ 1,692,354	\$ 276,528	\$ 1,415,826
Add: Original Costs and Depreciation														
Assets Installed Prior to 10/01/06					\$ 18,276,578.49		\$ 225,583.73	\$ 5,506,631	\$ 12,769,947	(1)		\$ 46,961,447	\$ 15,049,625	\$ 31,911,822
Grand Total Depreciation					\$ 19,754,384.95		\$ 272,531.61	\$ 5,746,892	\$ 14,007,494			\$ 48,553,801	\$ 15,326,153	\$ 33,327,648

(1) See Supporting Schedule No. 2, Page 2 of 2.

Municipal Authority of the Borough of Shenandoah
Annual and Accrued Depreciation of Utility Plant In service
At December 31, 2015

Fixed Capital Assets Placed into Service Prior to October 1, 2006

Reproduction Cost New Less Depreciation
Trended Depreciated Original Costs

Description	Original Cost 12/31/2015	Year Installed	Life	Age	Annual Depreciation Expense	Accrued Depreciation 12/31/2015	Depreciated Original Cost 12/31/2015	Line No.	Handy- Whitman Trend Factors	Trended Original costs	Trended Accrued Depreciation	Depreciated Trended Original costs
L Misc. Intangible Plant	\$ 85,139.00				\$ -	\$ -	\$ 85,139	Unity	1.0000	\$ 85,139	\$ -	\$ 85,139
WC Engineering Fees - Dam	1,654,315.46	1992	80	23.5	20,678.94	485,955	1,168,360	2	1.9481	3,222,772	946,689	2,276,083
L Land	144,751.20				0.00	0	144,751	Unity	1.0000	144,751	-	144,751
CI Financing Cost	556,648.30	1992	80	23.5	6,958.10	163,515	393,133	2	1.9481	1,084,407	318,544	765,863
WP Bldg & Structures	500,521.50	1982	75	33.5	6,673.62	223,566	276,956	15	3.3081	1,655,775	739,579	916,196
WC Collect & Reservoirs	3,289,993.37	1981	100	34.5	32,899.93	1,135,048	2,154,945	2	2.7831	9,156,381	3,158,952	5,997,429
WC Filtration Plant	7,647,991.75	2004	75	11.5	101,973.22	1,172,692	6,475,300	17	1.7938	13,718,968	2,103,575	11,615,393
PD Wells & Springs	1,935.00	1987	50	28.5	38.70	1,103	832	Unity	1.0000	1,935	1,103	832
PD Pumping Equipment	195,068.93				0.00	195,069	-				-	-
PD Water Treatment Equipment	204,537.90	1988	45	27.5	4,545.29	124,995	79,543	17	2.8416	581,215	355,186	226,029
PD Dist Res & Standpipes	1,113,598.44	1987	75	28.5	14,847.98	423,167	690,431	23	3.7857	4,215,750	1,601,983	2,613,767
PD Mains	1,277,622.35	1973	100	42.5	12,776.22	542,989	734,633	34	7.9468	10,153,009	4,315,025	5,837,984
PD Services	588,514.14	1985	65	30.5	9,054.06	276,149	312,365	39	2.7522	1,619,709	760,017	859,692
PD Meters	451,964.97	1992	35	23.5	12,913.28	303,462	148,503	40	2.0561	929,285	623,948	305,337
PD Hydrants	150,635.58	1992	75	23.5	2,008.47	47,199	103,437	42	2.5688	386,953	121,245	265,708
OFF Office Furn & Equip	72,766.12				0.00	72,766	-				-	-
TE Trans Equip	170,576.01				0.00	170,576	-				-	-
TE Ptools Shop & Equip	130,641.81				0.00	130,642	-				-	-
CE Comm Equip	33,958.59				0.00	33,959	-				-	-
TE Other Equip	5,398.07	1998	25	17.5	215.92	3,779	1,619	Unity	1.0000	5,398	3,779	1,619
Total	\$ 18,276,578.49				\$ 225,583.73	\$5,506,631	\$ 12,769,947			\$ 46,961,447	\$ 15,049,625	\$ 31,911,822

MAINTENANCE BLDG

4/6/2022

<p>General Information</p> <p>Tax Map 64-05-0283.000</p> <p>Parcel Address 0 N FERGUSON STREET</p> <p>SHENANDOAH, PA 17976</p> <p>School District Shenandoah Valley</p> <p>Municipality Shenandoah Borough</p>	<p>Legal Information</p> <p>Front Of Lot: Depth: Unit of Front: Acres: 0.05</p> <p>Land Use Type: 604</p> <p>Roll Section: 8</p> <p>Assessment Property Class: CX</p> <p>(Assessment Property Class is NOT a Zoning Classification. Contact the appropriate Municipal Zoning Officer for Zoning Info.)</p>
---	---

Current Ownership Information			
Owner Name	Owner Address	Deed Bk/Pg	Sale Date
SHENANDOAH MNCPL ATHRTY OF	PO BOX 110 SHENANDOAH, PA 17976	1287/0147	3/14/1980

Bill To Information	
Owner Name	Owner Address
SHENANDOAH MNCPL ATHRTY OF	PO BOX 110 SHENANDOAH, PA 17976

<p>Value Data</p> <p>BASE YEAR: 1996</p> <table border="0"> <tr> <td>Base Year Value</td> <td>Assessed Value</td> </tr> <tr> <td>Land: 4500</td> <td>Land: 2250</td> </tr> <tr> <td>PA Ag Land:</td> <td>PA Ag Land:</td> </tr> <tr> <td>Misc Structures:</td> <td>Improvements: 4040</td> </tr> <tr> <td>Buildings: 8080</td> <td>Total: 6290</td> </tr> <tr> <td>Total: 12580</td> <td></td> </tr> </table> <p>Status</p> <p>Clean & Green: N</p> <p>Homestead: N</p>	Base Year Value	Assessed Value	Land: 4500	Land: 2250	PA Ag Land:	PA Ag Land:	Misc Structures:	Improvements: 4040	Buildings: 8080	Total: 6290	Total: 12580		<p>Site Information</p> <p>Site: L</p> <p>Terrain:</p> <p>Water Type: P</p> <p>Sewer Type: S</p> <p>Natural Gas: N</p> <p>Road Type: P</p> <p>Location Type: SS</p> <p>Road Access: C</p> <p>Sidewalk: N</p> <p>Fronting: SEC</p> <p>Rail Access: N</p>
Base Year Value	Assessed Value												
Land: 4500	Land: 2250												
PA Ag Land:	PA Ag Land:												
Misc Structures:	Improvements: 4040												
Buildings: 8080	Total: 6290												
Total: 12580													

Sales History							Hide Sales History
Deed Book	Deed Page	Sale Date	Vacant /Improved	Sale Price	Quals	Grantor	Grantee
0826	0015	10/4/1951	v	\$	n		MILLER, J C & S
1287	0147	3/14/1980	v	\$	u	SHENANDOAH BORO MUNICIPAL AUTH	SHENANDOAH MNCPL ATHRTY OF

Building Information		Hide Buildings
Building (comm) 1 of 1		
Stories:	Finished Basement:	Total Living Area:
Total Rooms:	Attic with Stairs	Total Perimeter:
Bed Rooms:	Dug Basement %:	Exterior Wall 1:
Family Rooms:	Year Built: 1950	Exterior Wall 2:
Full Baths:	Effective Age: 1950	# of Car Garage:
Half Baths:	Exterior Condition:	Sq. Ft of Garage:
Heating Type:	Interior Condition:	Sq. Ft. Encl. Porch:
Fireplace Count:	House Grade:	Building Value: 8082
Central Air:	Building Use Code: 12	
Sketch Floor: 01	Unfinished Basement: None	Heating Type: None
Floor Type/Finish: Cement	Interior Wall: Unfinished	Class of Construction: D
Commercial Grade: D - Low Quality	Exterior Wall: Block	

Miscellaneous Structures	Hide Structures
--------------------------	---------------------------------

No Miscellaneous Structures Found

Sketches

[Hide Sketches](#)

Image Id:69065-0



Pictures

[Hide Pictures](#)

Pictures: 1



PS. 5 & CARETAKER HOUSE

4/14/2022

<p>General Information</p> <p>Tax Map 30-08-0007.000 Parcel Address WEST SIDE OF RESERVOIR RINGTOWN, PA 17967 School District North Schuylkill Municipality Union Township</p>	<p>Legal Information</p> <p>Front Of Lot: Depth: Unit of Front: Acres: 277 Land Use Type: 604 Roll Section: 8 Assessment Property Class: CX (Assessment Property Class is NOT a Zoning Classification. Contact the appropriate Municipal Zoning Officer for Zoning Info.)</p>
<p>Current Ownership Information</p> <p>Owner Name SHENANDOAH MNCPLATHRTY OF Owner Address PO BOX 110 SHENANDOAH, PA 17976 Deed Bk/Pg / Sale Date</p>	
<p>Bill To Information</p> <p>Owner Name SHENANDOAH MNCPLATHRTY OF Owner Address PO BOX 110 SHENANDOAH, PA 17976</p>	
<p>Value Data</p> <p>BASE YEAR: 1996</p> <p>Assessed Value Land: 227000 PA Ag Land: 113500 Improvements: 34050 Total: 147550</p> <p>Misc Structures: 68100 Buildings: 68100 Total: 295100</p> <p>Status Clean & Green: N Homestead: N</p>	<p>Site Information</p> <p>Site: B Terrain: R Water Type: P Sewer Type: S Natural Gas: N Road Type: P Location Type: SPOT Road Access: C Sidewalk: N Fronting: RES Rail Access: N</p>

[View Sales History](#)

<p>Building Information</p>	
<p>Building (comm) 1 of 2</p>	
<p>Stories: Total Rooms: Bed Rooms: Family Rooms: Full Baths:</p>	<p>Finished Basement: Attic with Stairs Dug Basement %: Year Built: 1913 Effective Age: 1913</p> <p>Total Living Area: Total Perimeter: Exterior Wall 1: Exterior Wall 2: # of Car Garage:</p>

P.S.

CARD TAKEN in House

Half Baths: Heating Type: Fireplace Count: Central Air: Sketch Floor: 01 Floor Type/Finish: Cement Commercial Grade: B - Good Quality	Exterior Condition: Interior Condition: House Grade: Building Use Code: 43 Unfinished Basement: Interior Wall: Unfinished Exterior Wall: Stone	Sq. Ft. of Garage: Sq. Ft. Encl. Porch: Building Value: 28224 Heating Type: None Class of Construction: B
Building (resident) 2 of 2		
Stories: H Total Rooms: 5 Bed Rooms: 2 Family Rooms: 0 Full Baths: 1 Half Baths: 0 Heating Type: HW Fireplace Count: 1 Central Air: N Sketch Floor: Floor Type/Finish: Commercial Grade:	Finished Basement: Attic with Stairs NONE Dug Basement %: 100 Year Built: 1913 Effective Age: 1913 Exterior Condition: F Interior Condition: S House Grade: C Building Use Code: DETACH Unfinished Basement: Interior Wall: Exterior Wall:	Total Living Area: 1540 Total Perimeter: 204 Exterior Wall 1: SN Exterior Wall 2: # of Car Garage: 0 Sq. Ft. of Garage: Sq. Ft. Encl. Porch: 264 Building Value: 38767 Heating Type: Class of Construction:

Miscellaneous Structures					Hide Structures		
Grade for Outbuilding	Use Code	Number of Stories	Length	Width	Total Area	Building Value	Year Built
F	1horseb	1	19	43	817	980	
P	sheddis	1	13	20	260	130	1913

Sketches

Image Id:63755-0

[Hide Sketches](#)

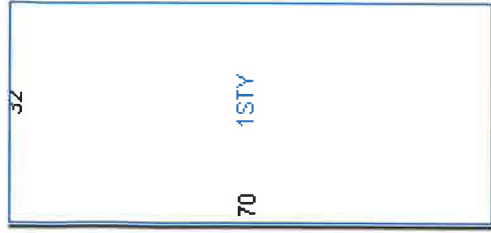
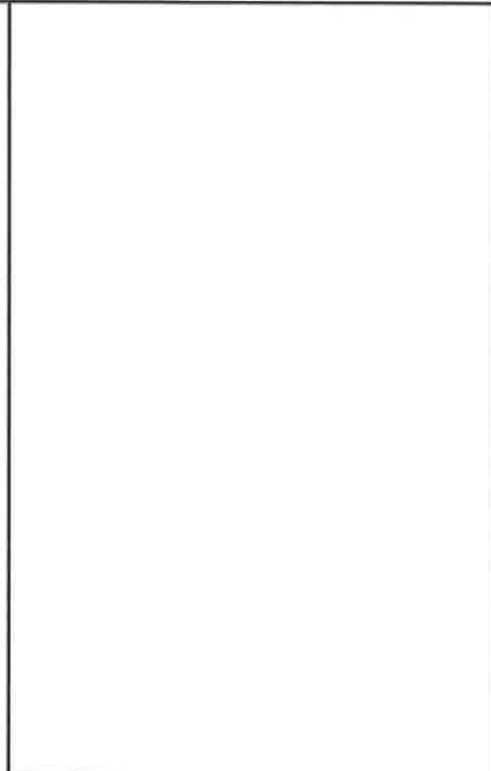


Image Id:20387-0

28	HB
E	8



Pictures

Pictures: 2

[Hide Pictures](#)





Schuylkill County Assessment Bureau CAMA Card

4/4/2022



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Accession Number: ADA083746

Title:

National Dam Inspection Program. Raven Run Dam Number 2 (NDS ID Number PA-663 DER ID Number 54-7) Susquehanna River Basin, Lost Creek, Schuylkill County, Pennsylvania. Phase I Inspection Report,

Descriptive Note:

Corporate Author: KIMBALL (L ROBERT) AND ASSOCIATES EBENSBURG PA

Personal Author(s): Kimball,R. Jeffrey (<https://discover.dtic.mil/results/?q=%22Kimball%2CR.+Jeffrey%22>)

Report Date: 1980-03-01

Pagination or Media Count: 66.0

Abstract:

Raven Run Dam No. 2 is an earth and rockfill dam, 462 feet long and 37 feet high. The crest width of the dam is 8 feet. The spillway is located on the right abutment and consists of a rectangular shaped weir formed by stone masonry walls on both sides. The weir is 60 feet long. The spillway exit channel discharges on the right hillside below the toe of dam. The outlet conduit consists of a 24 inch or a 36 inch cast iron pipe under the earth embankment. Upstream of Raven Run Dam No. 2 is Raven Run Dam No. 3. All flows from Raven Run Dam No. 3 discharge into Raven Run No. 2 Reservoir. The spillway and reservoir are capable of controlling the PMF. Based on criteria established by the Corps of Engineers, the spillway is termed adequate. The seepage exiting below the toe of the dam should be monitored at regular intervals. In addition, a subsidence investigation should be conducted to determine the effects of past and present mining beneath the structure.

Descriptors:

*EARTH DAMS (https://discover.dtic.mil/results/?q=%22*EARTH+DAMS%22) ; STABILITY (<https://discover.dtic.mil/results/?q=%22STABILITY%22>) ; HYDROLOGY (<https://discover.dtic.mil/results/?q=%22HYDROLOGY%22>) ; DEFICIENCIES (<https://discover.dtic.mil/results/?q=%22DEFICIENCIES%22>) ; SAFETY (<https://discover.dtic.mil/results/?q=%22SAFETY%22>) ; VISUAL INSPECTION (<https://discover.dtic.mil/results/?q=%22VISUAL+INSPECTION%22>) ; FLOODING (<https://discover.dtic.mil/results/?q=%22FLOODING%22>) ; RESERVOIRS (<https://discover.dtic.mil/results/?q=%22RESERVOIRS%22>) ; PENNSYLVANIA (<https://discover.dtic.mil/results/?q=%22PENNSYLVANIA%22>)

Subject Categories: Civil Engineering

Distribution Statement: APPROVED FOR PUBLIC RELEASE

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DEFENSE TECHNICAL INFORMATION CENTER
8725 John J. Kingman Road, Fort Belvoir, VA 22060-6218
1-800-CAL-DTIC (1-800-225-3842)

SUSQUEHANNA RIVER BASIN
LOST CREEK, SCHUYLKILL COUNTY

①

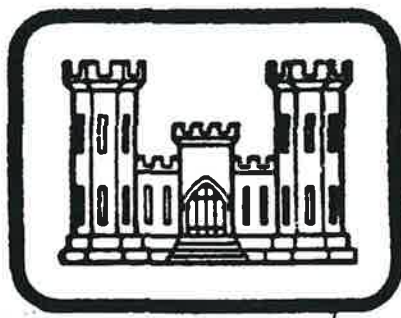
⑥ National Dam Inspection Program
RAVEN RUN DAM NO. 2

(NDS ID NO. PA-663
DER ID NO. 547)

Shenandoah Municipal Authority
Lost Creek, Schuylkill
County, Pennsylvania.

SHENANDOAH MUNICIPAL AUTHORITY

PHASE I INSPECTION REPORT,
NATIONAL DAM INSPECTION PROGRAM



12/66

10/P. J. S. Kimball

Prepared By
L. ROBERT KIMBALL & ASSOCIATES
CONSULTING ENGINEERS & ARCHITECTS
EBENSBURG, PENNSYLVANIA
15931

⑬ DAC W 31-80 - C - 20

FOR
DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT CORPS OF ENGINEERS
BALTIMORE, MARYLAND
21203

411059

⑪ MARCH 1980

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Approximately 3,000 feet downstream of the dam is a high railroad embankment with a culvert beneath. Immediately downstream of this culvert are approximately 10 dwellings on Lost Creek.

e. Ownership. Raven Run Dam is owned by the Shenandoah Municipal Authority. Correspondence should be addressed to:

Shenandoah Municipal Authority
26 West Lloyd Street
Shenandoah, PA 17976
Attention: Charles Dallazia, Manager
717-462-1904

f. Purpose of Dam. Raven Run Dam No. 2 is used for water supply.

g. Design and Construction History. No information is available on the design or construction history of the dam. It is believed that the dam was constructed around the time (1884-1885) of Raven Run Dam No. 3.

h. Normal Operating Procedures. The reservoir level is maintained at the spillway crest elevation (1580.5). The outlet pipe remains open and flow is discharged through this pipe on an as-needed basis to the water system. Excess flow is discharged through the spillway.

1.3 Pertinent Data.

a. Drainage Area (total). 0.93 square miles

b. Discharge at Dam Site (cfs).

Maximum known flood at dam site	Unknown
Spillway capacity at top of dam (spillway only)	1601
Discharge at right abutment around spillway	387
Reservoir Drain (24" or 36" CIP)	Unknown

c. Elevation (U.S.G.S. Datum) (feet). - Field survey based on pool elevation of 1580.5' as determined from survey at Raven Run Dam No. 3.

Top of dam - low point	1584.7
Top of dam - design height	Unknown
Maximum pool (PMF)	1584.7
Normal pool	1580.5
Emergency spillway crest	1580.5
Streambed at centerline of dam	1548.0
Toe of dam	1548.2

d. Reservoir (feet).

Length of maximum pool	900
Length of normal pool	900

e. Storage (acre-feet).

Normal pool	98
Top of dam	139

f. Reservoir Surface (acres).

Top of dam	11.4
Normal pool	9
Spillway crest	9

g. Dam.

Type	Earthfill
Length	462'
Height	37'
Top width	8'
Side slopes - upstream	2H:1V
- downstream	1.5H:1V
Zoning	Earth and rock rubble
Impervious core	Unknown
Cutoff	Unknown
Grout curtain	Unknown

h. Reservoir Drain.

Type	24" or 36" CI pipe
Length	Approximately 140 feet
Closure	Valve at toe
Access	None
Regulating facilities	Valve at toe

i. Spillway.

Type	Rectangular
Weir Length	60'
Crest elevation	1580.5'
Upstream channel	Unrestricted (lake)
Downstream channel	Open channel



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(<https://discover.dtic.mil>)

View the full text of this report (<https://apps.dtic.mil/sti/pdfs/ADA083751.pdf>)

Accession Number: ADA083751

Title:

National Dam Inspection Program. Raven Run Dam Number 3 (NDS ID Number PA-656 DER ID Number 54-8) Susquehanna River Basin, Lost Creek, Schuylkill County, Pennsylvania. Phase I Inspection Report,

Descriptive Note:

Corporate Author: KIMBALL (L ROBERT) AND ASSOCIATES EBENSBURG PA

Personal Author(s): Kimball,R. Jeffrey (<https://discover.dtic.mil/results/?q=%22Kimball%2CR.+Jeffrey%22>)

Report Date: 1980-03-01

Pagination or Media Count: 71.0

Abstract:

Raven Run Dam No. 3 is an earth and rockfill dam 1,080 feet long and 40 feet high. The crest width of the dam varies from 10 feet wide to 24 feet wide. A secondary embankment Right Arm is located north of the main embankment. This embankment is 320 feet long and 7 feet high. The crest width is 8 feet. The spillway is located on the main embankment 780 feet from the left abutment. The spillway is rectangular shaped with stone masonry retaining walls forming the sides. The weir length is 40 feet long. The spillway discharges into a gully created by erosion and eventually flows into Raven Run No. 2 Reservoir. The inspection and review of data of Raven Run Dam No. 3 did not reveal any problems which require emergency action. The dam appears to be in fair condition but poorly maintained and operated. The spillway and reservoir are capable of controlling approximately 58 of the PMF. Based on criteria established by the Corps of Engineers, the spillway is termed inadequate.

Descriptors:

*EARTH DAMS (https://discover.dtic.mil/results/?q=%22*EARTH+DAMS%22) ; STABILITY (<https://discover.dtic.mil/results/?q=%22STABILITY%22>) ; HYDROLOGY (<https://discover.dtic.mil/results/?q=%22HYDROLOGY%22>) ; DEFICIENCIES (<https://discover.dtic.mil/results/?q=%22DEFICIENCIES%22>) ; SAFETY (<https://discover.dtic.mil/results/?q=%22SAFETY%22>) ; VISUAL INSPECTION (<https://discover.dtic.mil/results/?q=%22VISUAL+INSPECTION%22>) ; FLOODING (<https://discover.dtic.mil/results/?q=%22FLOODING%22>) ; RESERVOIRS (<https://discover.dtic.mil/results/?q=%22RESERVOIRS%22>) ; PENNSYLVANIA (<https://discover.dtic.mil/results/?q=%22PENNSYLVANIA%22>)

Subject Categories: Civil Engineering

Distribution Statement: APPROVED FOR PUBLIC RELEASE

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8725 John J. Kingman Road, Fort Belvoir, VA 22060-6218
1-800-CAL-DTIC (1-800-225-3842)

A 16" cast iron pipe passes beneath the dam at approximately original ground surface. The pipe is supported on a dry laid wall extending down to the sandstone strata. In the reservoir the pipe passes through a vertical masonry cutoff wall near the upstream toe of the embankment. The entrance to the pipe is screened with a loosely laid dry masonry wall. No cutoff collars are constructed along the pipe. Below the dam the pipe passes through a 10' x 16' masonry gate structure housing a 16" x 6" tee. The main 16" pipe serves as a blow off for draining the reservoir. Water is ordinarily discharged into the No. 2 Reservoir through the 6" pipe.

b. Location. The dam is located on Lost Creek, two miles west of Shenandoah, Schuylkill County, Pennsylvania. Raven Run Dam No. 3 can be located on the Shenandoah, U.S.G.S. 7.5 minute quadrangle.

c. Size Classification. Raven Run Dam No. 3 is a small size structure (40 feet high, 278 acre-feet).

d. Hazard Classification. Raven Run Dam No. 3 is a high hazard dam. Downstream conditions indicate that loss of more than a few lives is probable should the structure fail. One thousand feet downstream of the dam is Raven Run Dam No. 2. Approximately 4,000 downstream Lost Creek flows under a railroad embankment and through a culvert. Ten dwellings are located immediately downstream of this culvert.

e. Ownership. Raven Run Dam No. 3 is owned by the Shenandoah Municipal Authority. Correspondence should be addressed to:

Charles Dallazia, Manager
Shenandoah Municipal Authority
26 West Lloyd Street
Shenandoah, PA 17976
717-462-1904

f. Purpose of Dam. Raven Run Dam No. 3 is used for water supply .

g. Design and Construction History. The dam was designed and construction was supervised by Heber S. Thompson, Engineer for the Girard Water Company. The dam was constructed in 1884 to 1885 by Thomas H. Rickert, a contractor located in Pottsville, Pennsylvania. The dam was originally built to impound the waters of Lost Creek, but the stream was first contaminated and finally destroyed by the mining operation of the Locust Mountain Coal Company. The Little Buck Mountain coal seam outcrops in the north arm of the reservoir and mining operations reached close to the water surface. A cave-in or crop fall occurred and water from the reservoir was lost to the mine at one point in time. In 1918 the right (north) arm embankment was constructed.

The height of the main embankment was increased by 2.5 feet in 1897.

h. Normal Operating Procedures. The north arm of the reservoir partially blocks flow into the reservoir. Water is pumped from the Ringtown reservoir into Raven Run No. 3 reservoir through a cast iron pipe. A small amount of water is drawn off the No. 3 reservoir to a small village. Excess water flows into Raven Run No. 2 Reservoir through the 6" water supply line.

1.3 Pertinent Data.

a. Drainage Area. 0.70 square miles

b. Discharge at Dam Site (cfs).

Maximum known flood at dam site	Unknown
Spillway capacity at top of dam	847
Reservoir drain	Unknown

c. Elevation (U.S.G.S. Datum) (feet). - Field survey based on assumed pool elevation of 1610.0' as shown on U.S.G.S. 7.5 minute quadrangle.

Top of dam - low point	1613.9
Top of dam - Original design height	1608.0
Maximum pool - (PMF)	1614.6
Normal pool	1610.3
Emergency spillway crest	1610.3
Streambed at centerline of dam	Approximately 1574
Maximum tailwater	1580.5

Toe of dam Approximately 1574

d. Reservoir (feet).

Length of maximum pool (PMF)	2000
Length of normal pool	1100

e. Storage (acre-feet).

Normal pool	215
Top of dam	278

f. Reservoir Surface (acres).

Top of dam	16.8
Normal pool	14
Spillway crest	14

g. Dam.

Type	Earthfill
Length	1080'
Height	40'
Top width	10'-24'
Side slopes - upstream	3H:1V
- downstream	1.5H:1V
Zoning	Yes
Impervious core	Center section
Cutoff	Clay puddle cutoff
Grout curtain	None

h. Reservoir Drain.

Type	16" C.I. pipe
Length	Approximately 180'
Closure	Valve downstream toe
Access	Upstream toe (only)
Regulating facilities	Valve downstream toe

i. Spillway.

Type	Rectangular
Length	40'
Crest elevation	1610.3'
Upstream channel	Unrestricted (lake)
Downstream channel	Open channel (gully)

FILE

CONTACT DOCUMENTS

FOR

**REPAINT 0.5 MILLION GALLON
SHENANDOAH HEIGHTS STANDPIPE**

FOR THE

**MUNICIPAL AUTHORITY OF THE
BOROUGH OF SHENANDOAH**

SHENANDOAH, PENNSYLVANIA

PROJECT NO. 23143

JANUARY 1991

**GANNETT FLEMING, INC.
WATER RESOURCES AND GEOTECHNICAL DIVISION**



HARRISBURG, PENNSYLVANIA

BURKE & BUIKE
ATTORNEYS AT LAW
P. O. Box 248
CENTRE & MAIN STREETS
SHENANDOAH, PA. 7976

AREA CODE 717
TELEPHONE 462-1219

STANLEY J. BURKE
WILLIAM L. J. BURKE

May 23, 1991,

Gannett Fleming, Inc.,
P. O. Box 1963
Harrisburg, Pennsylvania 17105-1963

Attention: Dennis W. Silbaugh, P.E.
Manager
Construction Management Section

Re: Project No. 23143.005
Repaint 0.5 Million Gallon
Shenandoah Heights Standpipe
Municipal Authority of the Borough of Shenandoah

Gentlemen:

Enclosed please find copy of Stipulation against
Liens which was recorded on May 17, 1991, in the Schuyl-
kill County Court House to No. J-1167 Term, 1991.

I assume that the contract will be forwarded to
you by the Municipal Authority.

Very truly yours,

Stanley J. Burke

Stanley J. Burke

SJB:kl

Enclosure

cc Municipal Authority of the Borough of Shenandoah

C

O

P

Y

STIPULATIONS AGAINST LIENS

MUNICIPAL AUTHORITY OF THE
BOROUGH OF SHENANDOAH
Owner

In the Court of Common Pleas of
SCHUYLKILL COUNTY, Pennsylvania

versus

Number J-1167 Term, 1991

Steve & Charlie's Painting
Contractor

WHEREAS, MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH, Owner herein, of Shenandoah, Pennsylvania, is about to execute contemporaneously herewith, a contract, with Steve & Charlie's Painting Contractor herein, of Bethlehem, Pennsylvania, for the REPAINT 0.5 MILLION GALLON SHENANDOAH HEIGHTS STANDPIPE.

Now, MAY 14, 1991, at the time of and immediately before the execution of the principal contract, and before any authority has been given by the said Owner to the said Contractor to commence work on the said REPAINT 0.5 MILLION GALLON SHENANDOAH HEIGHTS STANDPIPE, or purchase materials for the same in consideration of the making of said contract with Owner and the further consideration of One Dollar to Contractor paid by Owner, it is agreed that no lien shall be filed against the MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH by the Contractor, or any subcontractor, nor by any of the material men or workmen or any other person for any labor, materials purchased for extra labor or materials purchased for the construction of the said REPAINT 0.5 MILLION GALLON SHENANDOAH HEIGHTS STANDPIPE and the right to file such liens being expressly waived.

Witness, our hand and seals the day and year aforesaid.

SIGNED, SEALED AND DELIVERED

in the presence of

[Signature]

CONTRACTOR - Steve & Charlie's Painting

By: [Signature] X
Stavros Petrokeghias

By: [Signature] X
Charlie Kiprislis

OWNER

By: [Signature]

PROPOSAL

TO: MUNICIPAL AUTHORITY OF THE BOROUGH OF SHENANDOAH
SHENANDOAH, PENNSYLVANIA

FOR: REPAINT 0.5 MILLION GALLON SHENANDOAH HEIGHTS STANDPIPE

Pursuant to and in compliance with the request for bids on the above-captioned work, the undersigned offers to furnish all labor, materials, supplies, equipment, plant and other facilities, utilities and all things necessary or proper for, and to perform all work necessary or incidental to REPAINT 0.5 MILLION GALLON SHENANDOAH HEIGHTS STANDPIPE complete in every respect, in strict accordance with the Contract Documents as defined in the Specifications and any future changes therein as provided in the Contract and Specifications, and to perform all other obligations imposed by the Contract for the prices named in the following schedule:

SCHEDULE OF PRICES

<u>Item No.</u>	<u>Estimated Quantities</u>	<u>Item Description</u>	<u>Total Amount Dollars & Cents</u>
BASE BID			
1.	Lump Sum	Blast clean and repaint 0.5 MG Shenandoah Heights Standpipe interior, Complete	\$ <u>20,000</u> ..
2.	Lump Sum	Brush-off blast clean and repaint 0.5 MG Shenandoah Heights Standpipe exterior, Complete	\$ <u>12,200</u> ^{S.P.}
TOTAL BASE BID, ITEMS 1 THROUGH 2, INCLUSIVE			\$ <u>32,200</u>

2
12,200
S.P.

Gannett Fleming

SUPPLEMENTAL UNIT PRICES

Supplemental unit prices shall be used during construction if the quantities defined within limits set by the Specifications and shown on the Drawings are increased or decreased by the Engineer in a manner defined hereinabove in the Information for Bidders. All labor, material, tools, equipment, and work involved in each unit of work shall be in accordance with the governing sections and Articles of these Specifications.

SCHEDULE OF SUPPLEMENTAL UNIT PRICES
FOR ADDITIONS, DEDUCTIONS, OR DELETIONS IN CONTRACT QUANTITIES

<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>
Residual Waste Disposal Shenandoah Heights Standpipe Exterior	Lump Sum	\$ <u>1,200</u>
Hazardous Waste Disposal Shenandoah Heights Standpipe Exterior	Lump Sum	\$ <u>6,500</u>

NOTE: The cost of exterior residual waste disposal shall be included in Item No. 1. If, after the testing of the blasting debris, the debris is found to be a hazardous waste, the cost of residual waste disposal shall be deducted from the pay item, and the cost of hazardous waste disposal shall be added to the pay item, using the lump sum prices in the above supplemental unit prices.

Receipt of the following addenda is hereby acknowledged:

Addendum No. _____ Date Received: _____
Addendum No. _____ Date Received: _____
Addendum No. _____ Date Received: _____
Addendum No. _____ Date Received: _____

The presentation in the foregoing schedule of unit prices that are obviously unbalanced may be sufficient cause for rejection of the entire Proposal whether or not such Proposal is the lowest submitted.

Other additional and extra work, if any, performed in accordance with the Contract shall be paid for as provided in the Specifications.

The Specifications and all papers required thereof and submitted herewith, the Contract and all papers made part thereof by its terms, are hereby made part of this Proposal.

tory for either domestic or manufacturing use. This is due to the effective daily work of the many men employed by the city to make its water supply safe and the \$166,000, spent yearly for protecting and treating the water is certainly giving excellent returns. How soon the city will demand the higher standard of a perfectly clean, clear water, free at all times from tastes and odors cannot be now determined. Filtration is the only way to secure this improvement, and as the public seems well satisfied with the supply now furnished, the expenditure of millions for filtration appears to be one that will not be undertaken for some years to come.

The present head of the Department of Water Supply, Gas and Electricity is Commissioner Nicholas J. Hayes, and the Chief Engineer of the Bureau of Water Supply is Merritt H. Smith.

Design Features and Form of Contract for Constructing a Large Earthen Water Supply Dam on Cost Plus Fee Basis

By Jacob L. Crane, Jr., and J. O. Kimmcl, with Gannett, Reelie & Fleming, Consulting Engineers, Harrisburg and Erie, Pa.

On May 8, 1919, the Girard Water Co. of Pottsville, Pa., awarded a contract on the cost plus variable fee basis, for an earth fill dam and reservoir to be constructed on Whiskey Mill creek in Schuylkill county, Pennsylvania. The dam and reservoir, which will cost about \$200,000, are to provide additional storage to tide the Water Company over the dry periods in summer and fall.

Layout and General Features of Water Works

The interesting layout of the water company property is shown on the accompanying map, Fig. 1. The sources of supply are Drescher's Run, upon which Reservoir No. 5 is located, Whiskey Mill creek, upon which there is a small intake connected with Reservoir No. 5 by a 16-in. gravity main, and Little Catawissa creek, upon which there is another small intake. The water of this latter creek is only used in times of drouth, the water being then pumped directly from the intake.

The water collected from these sources is pumped through the station shown just below Reservoir No. 5, against about 600 ft. head, to the top of Locust mountain into Reservoir No. 3, from which it runs into Reservoirs Nos. 2 and 4. From all three of these reservoirs it is distributed by gravity to the collieries and villages in the Shenandoah and Mahanoy valleys immediately to the south. The collieries and their connecting railroads take 86 per cent. of the water supplied by The Girard Water Company, only 14 per cent. being used for domestic purposes.

These valleys form the most productive part of the Southern Anthracite coal field, and the mining operations have made it impossible to collect surface or ground water in this area. In fact, the mining operations have extended to the top of Locust mountain, where a great stripping operation, begun in 1913, has almost entirely destroyed the watersheds formerly tributary to Reservoirs Nos. 2, 3 and 4, and will soon force the abandonment altogether of Reservoir No. 4, which is underlain with valuable beds of coal. There is one bed of coal under Reservoirs Nos. 2 and 3, but this is comparatively thin, and the reservoirs are worth more for storage and distributing purposes than the coal. These factors drove The Girard Water Company over into the Catawissa Valley, which is purely an agricultural region, for its sources of supply, and in 1913 and 1914 the No. 5 reservoir and pumping station were built on Drescher's Run.

This reservoir impounds 312,000,000 gals. at spillway level from a watershed of only one square mile, with an average annual rainfall of 54 ins., and a mean run-off of about 45 per cent. The area of the reservoir is 41 acres and its maximum depth 51 ft., 6 ins. Reservoir No. 5, for which Mr. J. W. Le-

doux of Philadelphia made the plans, is an earth fill structure with a concrete pavement on the upstream face and a cut-off wall of concrete and clay puddle at the upstream toe. The reservoir and dam, the stone house of the pumpman and the pumping station make a fine appearance as viewed from Locust mountain in the setting of this beautiful valley.

Pumping

The pumping station is equipped with three 5-stage centrifugal pumps, operating against a head of 583 ft., or a pressure of 273 lbs. per sq. inch. The pumps are driven by three 250-H.P. electric motors. A fourth unit has been ordered. With this the capacity of the plant will be 6,000,000 gals. per day. The pumps have given splendid service and up to January 1, 1919, showed but little loss of efficiency after being in operation since Sept. 16, 1914, a total of 25,710 pump hours. Since Nov. 1, 1918, however, it has been necessary to pump directly from the Little Catawissa creek, in order to conserve the supply of stored water, and as this was not contemplated when the plant was designed, the water does not pass through the screen pot, as does the water from Reservoir No. 5, nor is there an opportunity for the sediment in the water to settle. This has caused more wear to the pump parts in six months than in the previous 4 years. The use as a suction main of the long supply line from the Little Catawissa intake causes a considerable drop in the capacity of the pumps, as compared with their duty when pumping from Reservoir No. 5, from

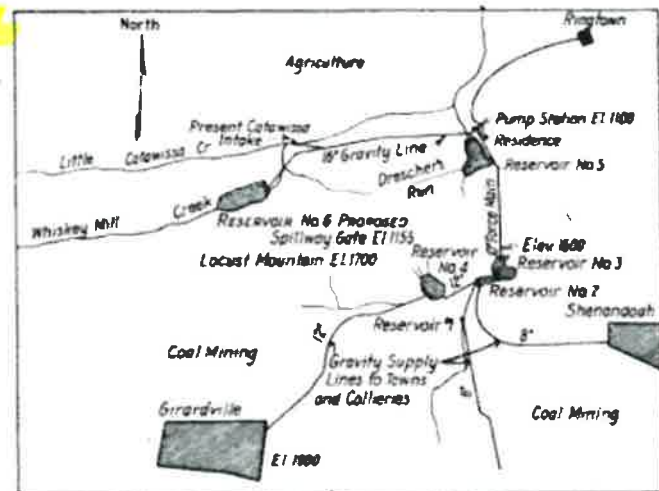


FIG. 1. MAP OF GIRARD WATER COMPANY'S RESERVOIRS AND PIPE LINES

which water is supplied to the pumps above atmospheric pressure. The new reservoir, No. 6, will so increase the supply of stored water as to do away with the necessity of supplementing it from the Little Catawissa.

Consumption of Water

The demand for water from The Girard Water Company has increased very rapidly in recent years, as follows:

Year	Total Water Consumed
1912	444,729,136 gals.
1913	508,162,356 gals.
1914	471,287,900 gals.
1915	565,475,640 gals.
1916	830,404,236 gals.
1917	942,261,648 gals.
1918	1,057,487,984 gals.

In the studies for Dam No. 6, carefully drawn mass diagrams developed the fact that Reservoir No. 5, and the un-stored waters of Whiskey Mill and Little Catawissa creeks would not provide sufficient water the year around to supply the demand in the immediate future. This is checked by the actual experience of the last four years, during which the

with photos

4/6/2022

<p>General Information</p> <p>Tax Map 64-05-0281.002</p> <p>Parcel Address 104 N FERGUSON STREET</p> <p>SHENANDOAH, PA 17976</p> <p>School District Shenandoah Valley</p> <p>Municipality Shenandoah Borough</p>	<p>Legal Information</p> <p>Front Of Lot: Depth: Unit of Front: Acres: 0.05</p> <p>Land Use Type: 604</p> <p>Roll Section: 8</p> <p>Assessment Property Class: CX</p> <p>(Assessment Property Class is NOT a Zoning Classification. Contact the appropriate Municipal Zoning Officer for Zoning Info.)</p>
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Current Ownership Information			
Owner Name	Owner Address	Deed Bk/Pg	Sale Date
SHENANDOAH BORO MUN AUTHY	28 W LLOYD ST SHENANDOAH, PA 17976	1289/0341	5/3/1980

Bill To Information	
Owner Name	Owner Address
SHENANDOAH BORO MUN AUTHY	28 W LLOYD ST SHENANDOAH, PA 17976

<p>Value Data</p> <p>BASE YEAR: 1996</p> <table border="0"> <tr> <td>Base Year Value</td> <td>Assessed Value</td> </tr> <tr> <td>Land: 4500</td> <td>Land: 2250</td> </tr> <tr> <td>PA Ag Land:</td> <td>PA Ag Land:</td> </tr> <tr> <td>Misc Structures:</td> <td>Improvements: 4850</td> </tr> <tr> <td>Buildings: 9700</td> <td>Total: 7100</td> </tr> <tr> <td>Total: 14200</td> <td></td> </tr> </table> <p>Status</p> <p>Clean & Green: N</p> <p>Homestead: N</p>	Base Year Value	Assessed Value	Land: 4500	Land: 2250	PA Ag Land:	PA Ag Land:	Misc Structures:	Improvements: 4850	Buildings: 9700	Total: 7100	Total: 14200		<p>Site Information</p> <p>Site: L</p> <p>Terrain:</p> <p>Water Type: P</p> <p>Sewer Type: S</p> <p>Natural Gas: N</p> <p>Road Type: P</p> <p>Location Type: SPOT</p> <p>Road Access: C</p> <p>Sidewalk: Y</p> <p>Fronting: RES</p> <p>Rail Access: N</p>
Base Year Value	Assessed Value												
Land: 4500	Land: 2250												
PA Ag Land:	PA Ag Land:												
Misc Structures:	Improvements: 4850												
Buildings: 9700	Total: 7100												
Total: 14200													

Sales History							Hide Sales History
Deed Book	Deed Page	Sale Date	Vacant /Improved	Sale Price	Quals	Grantor	Grantee
1041	1192	12/20/1962	v	\$	n		EDWARDS, E ETAL
1289	0341	5/3/1980	v	\$	u	SHENANDOAH BORO MUNICIPAL AUTH	SHENANDOAH BORO MUN AUTHY

Building Information		Hide Buildings
Building (comm) 1 of 1		
Stories:	Finished Basement:	Total Living Area:
Total Rooms:	Attic with Stairs	Total Perimeter:
Bed Rooms:	Dug Basement %:	Exterior Wall 1:
Family Rooms:	Year Built: 1938	Exterior Wall 2:
Full Baths:	Effective Age: 1938	# of Car Garage:
Half Baths:	Exterior Condition:	Sq. Ft of Garage:
Heating Type:	Interior Condition:	Sq. Ft. Encl. Porch:
Fireplace Count:	House Grade:	Building Value: 9698
Central Air:	Building Use Code: 12	
Sketch Floor: 01	Unfinished Basement: None	Heating Type: None
Floor Type/Finish: Cement	Interior Wall: Unfinished	Class of Construction: D
Commercial Grade: D - Low Quality	Exterior Wall: Brick	

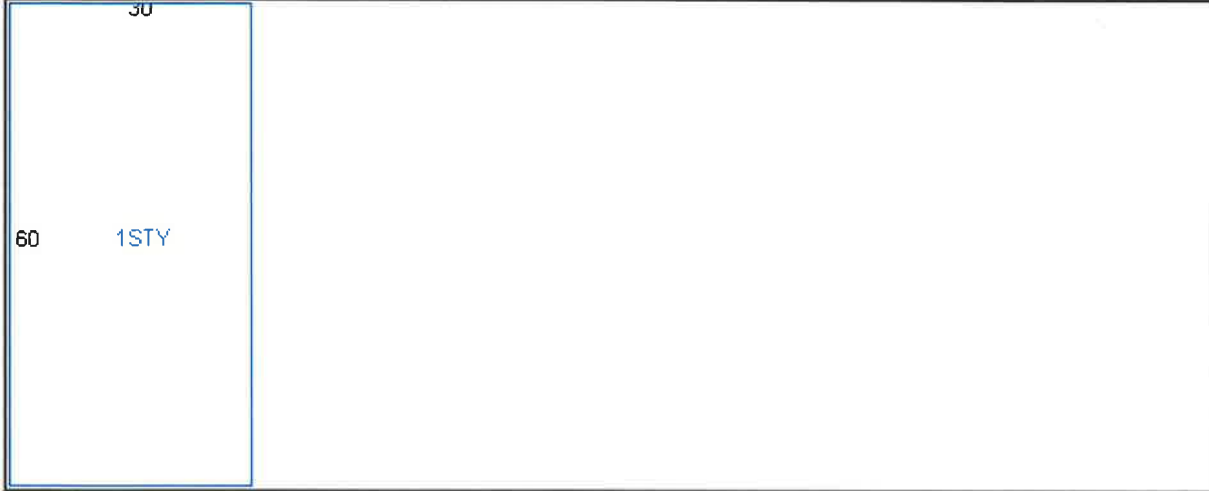
Miscellaneous Structures	Hide Structures
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No Miscellaneous Structures Found

Sketches

[Hide Sketches](#)

Image Id:69064-0



Pictures

[Hide Pictures](#)

Pictures: 1

