

EXHIBIT M1



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

- Please note our new name -
DEPARTMENT OF ENVIRONMENTAL PROTECTION
D E P

2 Public Square
Wilkes-Barre, PA 18711-0790
December 1, 1995

Northeast Regional Office

(717) 826-2511

The Municipal Authority of the
Borough of Shenandoah
26-28 West Lloyd Street
Shenandoah, PA 17976

Attention: Mr. Joseph Pancredi

RE: Public Water Supply Permit No. 3540044
The Municipal Authority of the Borough of Shenandoah
Shenandoah Borough,
Schuylkill County

Dear Mr. Pancredi:

Subject permit is enclosed.

We have also enclosed a copy of the Regulations for Public Water Supplies,
which we believe is self-explanatory.

Please study the permit carefully and direct any questions to the Technical
Services Section of this office, at (717) 826-2511.

Sincerely,

Lawrence A. Pawlusch
Program Manager
Water Supply and Community Health Program

Enclosures: Permit No. 3540044
Regulations For Public Water Supplies
Certificate of Construction

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

PUBLIC WATER SUPPLY PERMIT

NO. 3540044

<p>A. PERMITTEE: (Name and Address)</p> <p>The Municipal Authority of the Borough of Shenandoah 26-28 West Lloyd Street Shenandoah, PA 17976</p>	<p>B. PROJECT LOCATION</p> <p>Municipality <u>Borough of Shenandoah</u> County <u>Schuylkill County</u></p>		
<p>C. THIS PERMIT APPROVES FOR: 1. <input type="checkbox"/> Use as Source of Supply 2. <input type="checkbox"/> Construction 3. <input checked="" type="checkbox"/> Operation</p> <p>AS INDICATED BELOW:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>4. Source</p> <p><input type="checkbox"/> Wells(s) <input type="checkbox"/> Springs(s) <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Lake</p> </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>5. Facilities</p> <p><input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Settling <input checked="" type="checkbox"/> Filtration <input checked="" type="checkbox"/> Iron and Manganese Treatment <input type="checkbox"/> Softening <input type="checkbox"/> Fluoridation <input checked="" type="checkbox"/> Other <u>Taste and Odor Control and Color Reduction</u></p> </td> </tr> </table>		<p>4. Source</p> <p><input type="checkbox"/> Wells(s) <input type="checkbox"/> Springs(s) <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Lake</p>	<p>5. Facilities</p> <p><input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Settling <input checked="" type="checkbox"/> Filtration <input checked="" type="checkbox"/> Iron and Manganese Treatment <input type="checkbox"/> Softening <input type="checkbox"/> Fluoridation <input checked="" type="checkbox"/> Other <u>Taste and Odor Control and Color Reduction</u></p>
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<p>KNOWN AS _____</p>			
<p>YOU ARE HEREBY AUTHORIZED TO USE AS SOURCE(S) OF SUPPLY, CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, ARTICLE II, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.</p> <p>NO DEVIATIONS FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING THE TREATMENT PROCESS OR QUALITY OF WATERS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT.</p> <p>THIS PERMIT IS ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES UNDER THE AUTHORITY OF THE PENNSYLVANIA SAFE DRINKING WATER ACT, THE ACT OF MAY 1, 1984 (P.L. 206, NO. 43). OPERATION SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 109 ADOPTED UNDER THE AUTHORITY IN SECTIONS 4 AND 6(e) OF THE PENNSYLVANIA SAFE DRINKING WATER ACT.</p> <p>THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS <u>1 and 2</u></p> <p>THIS PERMIT IS SUBJECT TO THE FOLLOWING STANDARD CONDITIONS RELATING TO EROSION CONTROL _____</p>			
<p>PERMIT ISSUED</p> <p>Date <u>July 26, 1995</u></p>	<p>DEPARTMENT OF ENVIRONMENTAL RESOURCES</p> <p>By <u>Lawrence A. Pawlus</u> LAWRENCE A. PAWLUS Title <u>Program Manager</u> Water Supply and Community Health Program</p>		

The Municipal Authority of the
Borough of Shenandoah

Public Water Supply
Permit No. 3540044

SPECIAL CONDITIONS

1. This Operations Permit does not address corrosion control treatment facilities. It is mandated that you attend appropriate "Operator Certification and Training" as described in 109.1107(c)(1) and provide proof of attendance. Upon receipt of the above, the Operations Permit will be modified to approve corrosion control equipment.
2. Each clarifier and filter effluent rate of flow controller must be programmed so that no clarifier and filter will produce more than 576 GPM and 720 GPM at any time, respectively. Also, the rinse water flow through each filter must not exceed 720 gpm.

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 WATER SUPPLY AND COMMUNITY HEALTH PROGRAM

For Dept. Use Only

Internal Review And Recommendations

Name of Applicant Municipal Authority of the Borough of Shenandoah Project Location Shenandoah Borough Schuylkill County Application Number 3540044

BRIEF DESCRIPTION OF PROJECT AND DISCUSSION (Use Additional Sheets If Necessary)

This project provides for the issuance of an operations permit for this 3.11 MGD water filtration plant at Shenandoah. The plant consists of 4 microfioc upflow clarifiers-filtration units and a 850,000 gallon storage tank. Corrosion control consists of orthophosphate addition and a maximum pH of 7.5 units. *(NOT APPROVED IN THIS PERMIT)*

The Certificate of Construction was received on June 30, 1995. The water filtration plant went into operation with our verbal approval on July 26, 1995. At that time, the plant was capable of meeting out potability standards while operating in the manual mode.

On September 26, 1995, an operations inspection was conducted. At the time of the inspection, the flow was 1.54 MGD, the raw water turbidity was 0.7 NTU and the mixed water pH was 6.3. The effluent chlorine residual was 1.9 mg/l, turbidity was 0.08 NTU, pH was 7.3 and the reservoir was at 16.5 feet. The overflow level is 19 feet. The water company tries to maintain 16 to 18 feet in the tank. The lowest level to date has been 14 feet. For CT purposes and tree log removal, the minimum tank level is 10 feet.

The following was noted during this final operations inspection. Approximately 5% to 6% of the total flow to the plant is recycled water when the recycle pumps are operating. The clarifier was running at about 14 hours before backwash. The filters were running at almost 90 hours before backwash. The operator was advised that the filter run time should be cut back.

CURRENT ESTIMATE COMPLETION DATE OF PROJECT (Industrial Wastes Only)

RECOMMENDATION AND ACTION

Approve Issue By Region	Approve Issue by Central Office	Refuse	Signature	Date
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	James P. LaBuz REVIEWING ENGINEER <i>James P. LaBuz</i>	10/30/95
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Richard J. Stepanski</i> Richard J. Stepanski, P.E. TECHNICAL SERVICES SECTION	10/30/95
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lawrence A. Pawlisch Program Manager WATER SUPPLY AND COMMUNITY HEALTH PROGRAM <i>Lawrence A. Pawlisch</i>	10/30/95

Permit Conditions
 1. Standard

2. Special (Use Additional Sheets If Necessary)

INTERNAL REVIEW AND RECOMMENDATION
Municipal Authority of the
Borough of Shenandoah
Page 2

The high service pumps deliver water to the plant and 18 homes in Raven Run.

The phosphate feed is paced off the Venturi in the post-treatment building.

The manganese was running high in the raw water (0.4 mg/l) and was meeting limits in the treated water (0.03 mg/l). The potassium permanganate feed was high to achieve these results.

The chlorine roof vent was exhausting in front of the door. This is an apparent design flaw.

The following pumps have been changed:

<u>Chemical</u>	<u>Previous Feeder</u>	<u>New Approved Feeder</u>
Potassium Permanganate	Two W&T44-113 11 GPH Feeders	Two Pulsa Feeders Model 680 rated at 8 GPH
Carbon	Two W&T44-322 11 GPH Feeders	Two Pulsa Feeders Model 680 rated at 8 GPH
Alum	Two W&T44-122 11 GPH Feeders	Two Pulsa Feeders Model 680 rated at 6 GPH
Alum	One W&T4E-100 10 GPH Feeder	One Pulsa Feeder rated at 20 GPH
Coagulant Aid	One W&T44-123 41 GPH Feeder	One Pulsa Feeder Model 880 rated at 10 GPH
Filter Aid	One W&T44-123 41 GPH Feeder	One Pulsa Feeder Model 880 rated at 10 GPH
Caustic Soda	Two W&T44-222 11 GPH Feeders	Two Pulsa Feeders Model 680 rated at 1.4 GPH
Phosphate	Two W&T44-112 5.5 GPH Feeders	Two Pulsa Feeders Model 680 rated at 6 GPH feeders.

INTERNAL REVIEW AND RECOMMENDATION
Municipal Authority of the
Borough of Shenandoah
Page 3

The Virchem 970 is now used as a coagulant aid. It is NSF approved on the Standard 60 and replaces the Calgon C-9 as previously permitted. Based on the above, it is recommended that the Operations Permit for the facility authorized under construction permit 5491509 issued on April 1, 1992 be approved with the changes and modifications noted herein.

CPT: 4-1419/.1



Pennsylvania Department of Environmental Protection

2 Public Square
Wilkes-Barre, PA 18711-0790
October 2, 1996

Northeast Regional Office

717-826-2511

The Municipal Authority of the Borough of Shenandoah
26-28 West Lloyd Street
Shenandoah, PA 17976

Attention: Mr. Joseph Pancredi

RE: Public Water Supply Operations Permit No. 3540044
The Municipal Authority of the Borough of Shenandoah
Shenandoah Borough, Schuylkill County

Dear Mr. Pancredi:

The operations permit is enclosed for the operation of corrosion control treatment at the water treatment plant covered under Construction Permit No. 5491509.

Please be advised that this Operations Permit will supercede your previously issued permit dated December 1, 1995.

Please study the permit carefully and direct any questions to the Technical Services Section of this office, at 717-826-2511.

Sincerely,

Lawrence A. Pawlush
Program Manager
Water Supply and Community Health Program

Enclosures: Permit No. 3540044
Regulations For Public Water Supplies
Certificate of Construction

Sup San



DEPT. OF ENV. PROTECTION
POTTSMVILLE DIST. OFFICE
96 OCT -8 AM 11:28

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL RESOURCES
 BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

PUBLIC WATER SUPPLY PERMIT

NO. 3540044

<p>A. PERMITTEE: (Name and Address) The Municipal Authority of the Borough of Shenandoah 26-28 West Lloyd Street Shenandoah, PA 17976</p>	<p>B. PROJECT LOCATION Municipality <u>Shenandoah Borough</u> County <u>Schuylkill</u></p>
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C. THIS PERMIT APPROVES FOR: 1. Use as Source of Supply 2. Construction 3. Operation

AS INDICATED BELOW:

<p>4. Source</p> <p><input type="checkbox"/> Wall(s) <input type="checkbox"/> Spring(s) <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Lake</p>	<p>5. Facilities</p> <p><input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Settling <input checked="" type="checkbox"/> Filtration <input checked="" type="checkbox"/> Iron and Manganese Treatment <input type="checkbox"/> Softening <input type="checkbox"/> Fluoridation <input checked="" type="checkbox"/> Other <u>Taste and Odor Control, Color Reduction and Corrosion Control</u></p>
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KNOWN AS Water Treatment Plant, Corrosion Control Treatment

YOU ARE HEREBY AUTHORIZED TO USE AS SOURCE(S) OF SUPPLY, CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, ARTICLE II, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.

NO DEVIATIONS FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING THE TREATMENT PROCESS OR QUALITY OF WATERS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT.

THIS PERMIT IS ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES UNDER THE AUTHORITY OF THE PENNSYLVANIA SAFE DRINKING WATER ACT, THE ACT OF MAY 1, 1984 (P.L. 206, NO. 43). OPERATION SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 109 ADOPTED UNDER THE AUTHORITY IN SECTIONS 4 AND 6(e) OF THE PENNSYLVANIA SAFE DRINKING WATER ACT.

THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS 1 and 2

THIS PERMIT IS SUBJECT TO THE FOLLOWING STANDARD CONDITIONS RELATING TO EROSION CONTROL

PERMIT ISSUED

Date

10/2/96

DEPARTMENT OF ENVIRONMENTAL RESOURCES

By

Lawrence A. Pawlush
 Lawrence A. Pawlush

Title

Program Manager

Water Supply & Community Health Program

The Municipal Authority of the
Borough of Shenandoah

Public Water Supply Permit No. 3540044
Operation Permit

SPECIAL CONDITIONS

1. Each clarifier and filter effluent rate of flow controller must be programmed so that no clarifier and filter will produce more than 576 gallons per minute and 720 gallons per minute at any time, respectively. Also, the rinse water flow through each filter must not exceed 720 gallons per minute.
2. This permit approves Virchem 970 for corrosion control. No other corrosion control chemical may be used without prior approval from the Department.

ATTACHMENT A

<u>PERMIT</u>	<u>DESCRIPTION</u>	<u>DATE</u>
Permit No. 5491509	Construction/Water Treatment Plant	April 1, 1992
Permit No. 3540044	Water Treatment Plan Operation	December 1, 1995
Permit No. 3540044	Approval of Corrosion Control Operation	October 2, 1996

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER SUPPLY AND COMMUNITY HEALTH PROGRAM

For Dept. Use Only

Internal Review And Recommendations

Name of Applicant	The Municipal Authority of The Borough of Shenandoah	Project Location	Shenandoah Borough Schuylkill County	Application Number	3540044
Operations Permit					

BRIEF DESCRIPTION OF PROJECT AND DISCUSSION (Use Additional Sheets If Necessary)

On December 1, 1995 an Operations Permit was issued for operation of the Municipal Authority of the Borough of Shenandoah's water treatment plant. This permit did not approve corrosion control which consisted of orthophosphate addition and pH adjustment to 7.5 units because the operator had not completed the required operator certification and training as described in Section 109.1107(c), Item 1 of the Regulations. On September 26, 1996 the Department received a copy of certification from Mr. Donald Nold indicating that he has successfully completed the corrosion control treatment for operators. Therefore, the operation permit has been revised to indicate approval to operate corrosion control facilities. The operations permit indicated that Virchem 970 is being used for corrosion control replacing the Calgon C-9 as was indicated in the construction permit. It was noted that the Virchem 970 was being used during the operation inspection dated September 26, 1995.

Based on the above, it is recommended that the operations permit be revised to reflect approval to operate corrosion control facilities consisting of pH adjustment to 7.5 with caustic soda and addition of an orthophosphate compound. The orthophosphate compound approved under this permit is Virchem 970.

Routine Review and Approval.

CURRENT ESTIMATE OF COMPLETION DATE OF PROJECT (Industrial Wastes Only)

RECOMMENDATION AND ACTION					
Approve Issue By Region	Approve Issue by Central Office	Refuse	Signature	Date	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	James P. LaBuz REVIEWING ENGINEER	<i>James P. LaBuz</i>	10/2/96
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Richard J. Stepanski, P.E. TECHNICAL SERVICES SECTION	<i>Richard J. Stepanski</i>	10/2/96
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lawrence A. Pawluch Program Manager WATER SUPPLY AND COMMUNITY HEALTH PROGRAM	<i>Lawrence A. Pawluch</i>	10/2/96
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

- Permit Conditions
1. Standard
 2. Special (Use Additional Sheets If Necessary)

DEPT. OF ENV. PROTECTION
POTTSMVILLE DIST. OFFICE
96 OCT -8 AM 11: 28

The Municipal Authority of the Borough of Shenandoah Public Water Supply Permit No. 3540044
Shenandoah Borough, Schuylkill County

SPECIAL CONDITIONS

1. Each clarifier and filter effluent rate of flow controller must be programmed so that no clarifier and filter will produce more than 576 GPM and 720 GPM at any time, respectively. The water treatment plant has a design capacity of 3.11 MGD.
2. Any change in chemical feed from that permitted requires prior approval by the Department.

The Municipal Authority of the Borough of Shenandoah Public Water Supply Permit No. 3540044
Shenandoah Borough, Schuylkill County

Attachment A

<u>Permit No.</u>	<u>Date of Issuance</u>	<u>Description</u>
5491509	April 1, 1992	Construction of 3.11 MGD Water Filtration Plant
3540044	December 1, 1995	Operation of Water Filtration Plant
3540044	October 2, 1996	Approval to Operate Corrosion Control Facilities
5491509 Minor Amendment No. 1	April 10, 1997	Construction of Transmission Main from Raven Run No. 2 to the Water Filtration Plant Tank Bypass, Additional Sludge Drying Beds
3540044	May 15, 1998	Operation of New Raven Run Transmission Main Tank Bypass and Sludge Drying Beds

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

Public Water Supply Permit No. 3540044

ATTACHMENT "A"

<u>Permit No.</u>	<u>Date of Issuance</u>	<u>Description</u>
5491509	April 1, 1992	Construction of 3.11 MGD Water Filtration Plant
3540044	December 1, 1995	Operation of Water Filtration Plant
3540044	October 2, 1996	Approval to Operate Corrosion Control Facilities
5491509 (Minor Amendment)	April 10, 1997	Construction of Transmission Main from Raven Run No. 2 to Water Filtration Plant Bypass, Additional Sludge Drawing Beds
3540044	May 15, 1998	Operation of New Raven Run Transmission Main Tank Bypass and Sludge Drawing Beds
3540044 (Minor Amendment)	December 14, 1999	Approval of New Chemical for Corrosion Control

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

Public Water Supply Permit No. 3540044

ATTACHMENT "B"

SPECIAL CONDITIONS

1. Each clarifier and filter effluent rate of flow controller must be programmed so that no clarifier and filter will produce more than 576 GPM and 720 GPM at any time, respectively. The water treatment plant has a design capacity of 3.11 MGD.
2. Any change in chemical feed from that permitted requires prior approval by the Department.



Pennsylvania Department of Environmental Protection

2 Public Square
Wilkes-Barre, PA 18711-0790
April 20, 2010

Northeast Regional Office

570-826-2511
Fax 570-830-3017

CERTIFIED MAIL NO. 7009 1680 0001 0015 5836

Municipal Authority of the Borough of Shenandoah
P. O. Box 110
Shenandoah, PA 17976

3540044
permit
file

Re: Permit to Operate
Public Water Supply Permit No. 3540044
Tank Painting and Rehabilitation
Heights and Turkey Run Tanks
Modifications to Pump Station 7
APS I.D. 664891
Shenandoah Borough, Schuylkill County

Dear Sir/Madam:

Subject 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.



Please study the permit carefully and direct any questions to Richard M. Mieszkowski at
570-830-3103.

Sincerely,

A handwritten signature in black ink, appearing to read "Dino R. Agustini". The signature is fluid and cursive, with the first name "Dino" being the most prominent.

Dino R. Agustini
Environmental Program Manager
Water Supply Management Program

Enclosure(s)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PUBLIC WATER SUPPLY PERMIT

NO. 3540044

<p>A. PERMITTEE (Name and Address)</p> <p>Municipal Authority of the Borough of Shenandoah P. O. Box 110 Shenandoah, PA 17976</p>	<p>B. PROJECT/PLANT LOCATION</p> <p>Municipality <u>Shenandoah Borough</u></p> <p>County <u>Schuylkill</u></p>
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C. THIS PERMIT APPROVES FOR: AS INDICATED BELOW:

1. CONSTRUCTION

2. OPERATION OF FACILITIES
Approved Under Construction Permit No. _____

Source

- Well(s)
 Spring(s)
 Surface Water
 Finished Water

- Impoundment
 Settling
 Filtration
 Iron and Manganese Treatment
 Softening
 Fluoridation
 Distribution Facility

Facilities

- General Corrosion Control
 Corrosion Control for Lead/Copper
 Disinfection
 Pump Station(s)
 Transmission Lines
 Finished Water Storage
 Other Tank Painting and Rehabilitation

BVRB

- Bottled Water System
 Bulk Water Hauling System
 Vending Water System
 Retail Water Facility

KNOWN AS Shenandoah Water System Improvements (Tank Painting and Modifications Pump Station #7)

LIMIT OF AUTHORIZATION

YOU ARE HEREBY AUTHORIZED TO CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.

THE PLANS, SPECIFICATIONS, REPORTS AND SUPPORTING DOCUMENTS SUBMITTED AS PART OF THE PERMIT APPLICATION BECOME PART OF THE PERMIT.

NO DEVIATIONS FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING THE TREATMENT PROCESS OR QUALITY OF WATERS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT.

THIS PERMIT IS ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION UNDER THE AUTHORITY OF THE PENNSYLVANIA SAFE DRINKING WATER ACT, THE ACT OF MAY 1, 1984 (P.L. 206, NO. 43), OPERATION SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 109 ADOPTED UNDER THE AUTHORITY IN SECTIONS 4 AND 6(e) OF THE PENNSYLVANIA SAFE DRINKING WATER ACT.

THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS N/A.

PERMIT ISSUED

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date April 20, 2010

By

Dino R. Agustini

Title Environmental Program Manager

Water Supply Management Program



COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

ENGINEERING INTERNAL REVIEW AND RECOMMENDATIONS

Name of Applicant: Municipal Authority of the Borough Of Shenandoah	eFACTS APS ID Number: 664891	Application Number: 3540044
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Project Location:

Shenandoah Borough, Schuylkill County

Brief Description of Project and Discussion (use additional sheets if necessary):

On February 23, 2009, Construction Permit No. 5491509MA was issued for tank painting and work at the Heights and Turkey Run tanks and modifications at Pump Station #7.

Coliform and VOC results are acceptable and were received October 23, 2009 with the Certificate of Construction. An inspection was conducted April 20, 2010. I was present along with the consulting engineer, Kim Mazur, and system operator, Rich Mansick.

The screen on the overflow at the Turkey Run tank is damaged and will be replaced. The 135 GPM, Grundfos, CR-20 pump at Station 7 was replaced with the equivalent Goulds. It operates on a VFD as approved.

The permit to operate may be issued.

RECOMMENDATION AND ACTION				
Approve	Return	Deny	Signature	Date
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ Richard M. Mieszkowski Reviewer	4/20/10
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ Richard J. Stepanski, P.E. Environmental Engineer Manager	4/20/10
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ Dino R. Agustini Environmental Program Manager	4/20/10

Hydrogeology IR & R Attached? Yes No

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL RESOURCES
 BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

PUBLIC WATER SUPPLY PERMIT

NO. 5490507

<p>A. PERMITTEE: (Name and Address) Municipal Authority of the Borough of Shenandoah 26-28 West Lloyd St. Shenandoah, PA 17976</p>	<p>B. PROJECT LOCATION</p> <p>Municipality <u>Shenandoah Borough</u></p> <p>County <u>Schuylkill</u></p>
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C. THIS PERMIT APPROVES FOR: 1. Use as Source of Supply 2. Construction 3. Operation

AS INDICATED BELOW:

<p>4. Source</p> <p><input type="checkbox"/> Well(s)</p> <p><input type="checkbox"/> Spring(s)</p> <p><input type="checkbox"/> Stream</p> <p><input type="checkbox"/> Lake</p>	<p>5. Facilities</p> <p><input type="checkbox"/> Impoundment</p> <p><input type="checkbox"/> Settling</p> <p><input type="checkbox"/> Filtration</p> <p><input type="checkbox"/> Iron and Manganese Treatment</p> <p><input type="checkbox"/> Softening</p> <p><input type="checkbox"/> Fluoridation</p> <p><input type="checkbox"/> Other _____</p>
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<input type="checkbox"/> Stabilization	<input type="checkbox"/> Disinfection	<input type="checkbox"/> Pump Station(s)
<input checked="" type="checkbox"/> Transmission Lines	<input checked="" type="checkbox"/> Distribution Storage	<input type="checkbox"/> Distribution System

KNOWN AS Kehly Run One Million Gallon Tank; Abandonment Kehly Run Reservoir

YOU ARE HEREBY AUTHORIZED TO USE AS SOURCE(S) OF SUPPLY, CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, ARTICLE II, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.

NO DEVIATIONS FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING THE TREATMENT PROCESS OR QUALITY OF WATERS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT.

THIS PERMIT IS ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES UNDER THE AUTHORITY OF THE PENNSYLVANIA SAFE DRINKING WATER ACT, THE ACT OF MAY 1, 1984 (P.L. 206, NO. 43). OPERATION SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 109 ADOPTED UNDER THE AUTHORITY IN SECTIONS 4 AND 6(e) OF THE PENNSYLVANIA SAFE DRINKING WATER ACT.

THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS _____

THIS PERMIT IS SUBJECT TO THE FOLLOWING STANDARD CONDITIONS RELATING TO EROSION CONTROL _____

PERMIT ISSUED

Date July 11, 1990

DEPARTMENT OF ENVIRONMENTAL RESOURCES

By Lawrence A. Pawlusch

Lawrence A. Pawlusch

Title Regional Sanitarian Manager

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

Internal Review And Recommendations

Name of Municipal Authority Shenandoah Project Shenandoah Borough Application
Applicant of the Borough of Shenandoah Location Schuylkill County Number 5490507

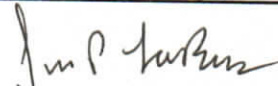

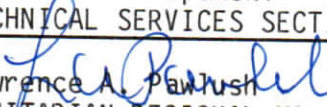
BRIEF DESCRIPTION OF PROJECT AND DISCUSSION (Use Additional Sheets If Necessary)

This project provides for the construction of 6,860 lineal feet of 12" ductile iron water transmission main and 1,190 feet of 16" ductile iron main along with other appurtenances such as blow off hydrants and a metering chamber/pressure reducing chamber. This pipeline is constructed to improve transmission capacity to handle maximum daily demands when the Kehly Run Reservoir is taken out of service.

The project also includes the construction of a one million gallon Kehly Run storage finished water tank needed to provide peak hour demand and fire flows with the surface supply out of service.

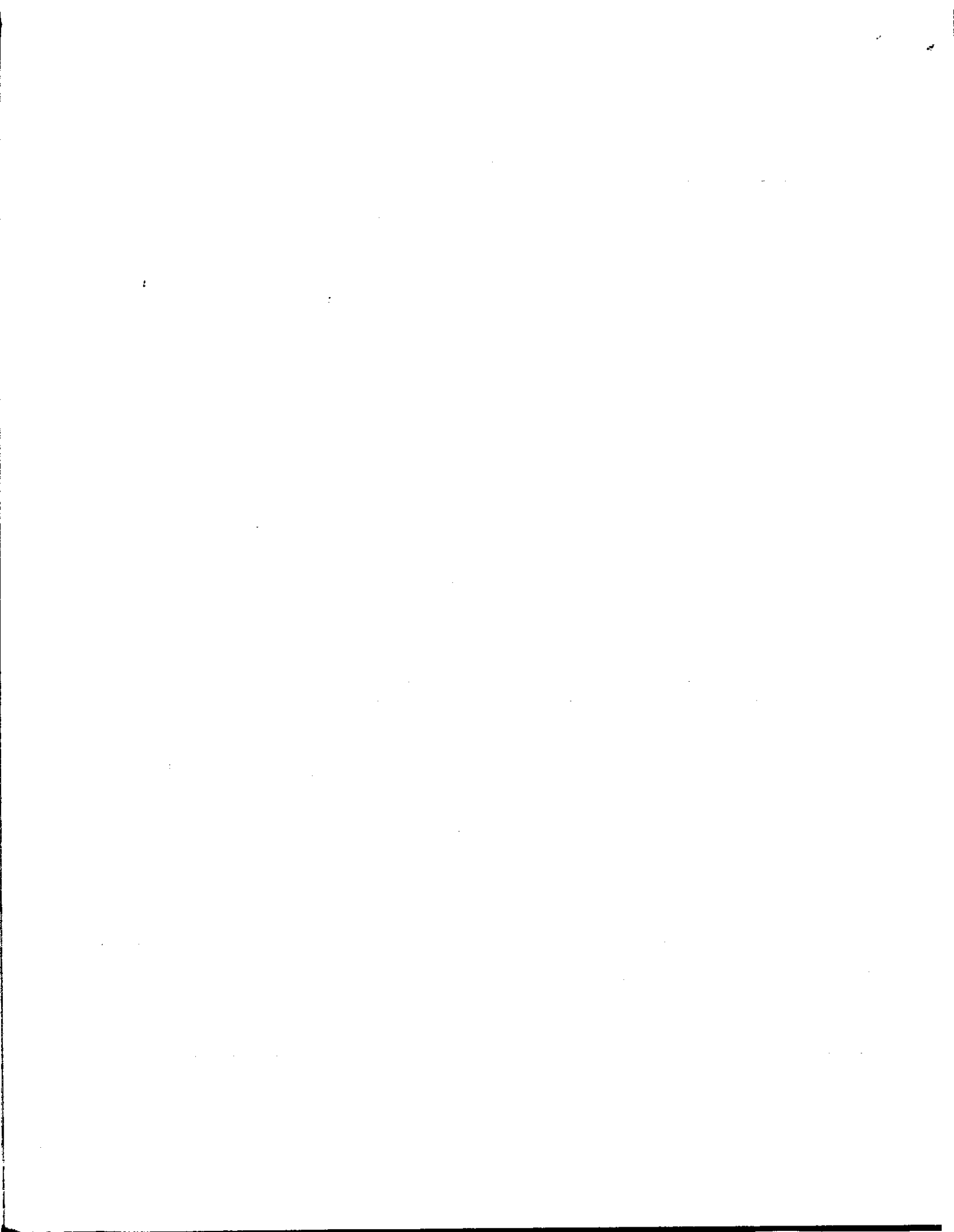
The water main project begins where the 16" transmission main coming out of the existing Raven Run Chlorination Building ends. At this point, there is a 16" by 12" reducer with a 2" air release/blow off and a 12" gate valve. The 12" ductile water main has a minimum 4 foot cover. This 12" water main extends to the combination metering/pressure reducing valve chamber located immediately after the tee supplying water to pump station #7. Pump station #7 continues to serve water to the Shenandoah Heights Section through an 8" existing water main. This connection is before the pressure reducing/meter chamber. The line has its own water meter to record the amount of water usage. Immediately before the pressure reducing/meter chamber, the 12" main reduces to a 10" main. There is a CURRENT ESTIMATE OF COMPLETION DATE OF PROJECT (Industrial Wastes Only)

RECOMMENDATION AND ACTION

Approve Issue By Region	Approve Issue by Central Office	Refuse	Signature	Date
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	James P. LaBuz REVIEWING ENGINEER 	7/11/90
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Richard J. Stepanski TECHNICAL SERVICES SECTION 	7/11/90
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lawrence A. Pawlusi SANITARIAN REGIONAL MANAGER 	7/11/90
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		

Permit Conditions

1. Standard
2. Special (Use Additional Sheets If Necessary)



ten inch bypass around this chamber. The pressure reducing/meter chamber is 17' by 6', below grade with access by a manhole. A sump pump is provided. A gate valve is located immediately outside the chamber.

Inside the chamber is a strainer, a 10" turbine meter which transmits a signal to a totalized/indicator within the existing high service pump station #7. This is followed by a 10" pressure reducing valve which is timer activated to regulate water movement in to and from the proposed Kehly Run finished water storage tank. At night the PRV opens up allowing for greater pressure in the Borough. This enables the one million gallon Kehly Tank to fill and also meet existing water demands. During the day, the PRV closes somewhat to allow the tanks to supply more of the system.

The Kehly Run one million gallon steel reservoir is 63' in diameter and 43' high (at overflow elevation). The tank has a ringwall design with oil saturated sand inside the ringwall, under the tank and on top of a 30 mil PVC liner. Number 2 fuel oil is sprayed at the rate of 0.5 gallons per square yard. An observation line on top of the liner extends into an observation vault. It is used to verify that the liner is not torn enabling us to verify that the groundwater is not being contaminated.

The existing 12" line from Kehly Run is physically disconnected in the isolation chamber. Kehly Run is abandoned as a conventional source of supply. It can only be used as an emergency source via an emergency permit. There is a separate 12" influent and effluent line to/from the Kehly Run tank. Both lines pass through the valve chamber.

The influent line has a 12" single acting altitude valve, a 12" gate valve and a level transmitter. The effluent line has a pressure gauge, 12" gate valve, and check valve. Below the valve chamber there is a tee with a 12" gate valve and 6" gate valve to allow the tank to be drained. The 12" line then tees back again with the 12" main into town.

There is a 6" diameter tank overflow line that discharges into an overflow basin. An appropriate air gap is provided. A fence surrounds the tank. An outside access ladder is provided. A tank de-icing system is provided and the air compressor is located in the valve chamber.

Contact time calculations are attached to the permit application showing CT time should Raven Run #2 become giardia contaminated before the filtration plant is constructed.

Based on the above, it is recommended that the permit application for abandonment of Kehly Run Reservoir, construction of a one million gallon Kehly Run tank, and 8,050' of transmission main be approved. This project is being financed through PENNVEST funding.

Routine review and approval.

CPT-1-801.1

50 JUN 13 11:31

UNIVERSITY MICROFILMS
SERIALS ACQUISITION
300 N ZEEB RD
ANN ARBOR MI 48106

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

PUBLIC WATER SUPPLY PERMIT

NO. 5491509

<p>A. PERMITTEE: (Name and Address) Municipal Authority of the Borough of Shenandoah 26-28 West Lloyd Street Shenandoah, PA 17976</p>	<p>B. PROJECT LOCATION</p> <p>Municipality <u>Shenandoah Borough</u></p> <p>County <u>Schuylkill</u></p>
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C. THIS PERMIT APPROVES FOR: 1. Use as Source of Supply 2. Construction 3. Operation

AS INDICATED BELOW:

<p>4. Source</p> <p><input type="checkbox"/> Well(s)</p> <p><input type="checkbox"/> Spring(s)</p> <p><input type="checkbox"/> Stream</p> <p><input checked="" type="checkbox"/> Lake</p>	<p>5. Facilities</p> <p><input type="checkbox"/> Impoundment</p> <p><input checked="" type="checkbox"/> Settling</p> <p><input checked="" type="checkbox"/> Filtration</p> <p><input checked="" type="checkbox"/> Iron and Manganese Treatment</p> <p><input type="checkbox"/> Softening</p> <p><input type="checkbox"/> Fluoridation</p> <p><input checked="" type="checkbox"/> Other <u>Taste and Odor Control, Corrosion Control and Color Reduction</u></p>	<p><input type="checkbox"/> Stabilization</p> <p><input checked="" type="checkbox"/> Disinfection</p> <p><input checked="" type="checkbox"/> Pump Station(s)</p> <p><input checked="" type="checkbox"/> Transmission Lines</p> <p><input checked="" type="checkbox"/> Distribution Storage</p> <p><input type="checkbox"/> Distribution System</p>
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KNOWN AS: Water Filtration Plant for Raven Run No. 2 and No. 3 and Ringtown No. 5 and No. 6.

YOU ARE HEREBY AUTHORIZED TO USE AS SOURCE(S) OF SUPPLY, CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, ARTICLE II, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.

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THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS A, B, and C

THIS PERMIT IS SUBJECT TO THE FOLLOWING STANDARD CONDITIONS RELATING TO EROSION CONTROL

PERMIT ISSUED

Date April 1, 1992

DEPARTMENT OF ENVIRONMENTAL RESOURCES

BY Lawrence A. Pawlush
 Lawrence A. Pawlush
 Sanitarian Regional Manager

Title _____

Commonwealth of Pennsylvania
Department of Environmental Resources
Community Environmental Control Program

DIVISION OF WATER SUPPLIES

Permittee: Municipal Authority of the Borough
of Shenandoah
Address: 26-28 West Lloyd Street
Municipality: Shenandoah, PA Zip 17976
Date: _____

Certificate of Construction/Modification/Operation & Maintenance Manual

Department of Environmental Resources
Community Environmental Control Program
Cross Valley Centre
667 North River Street
Plains, Pennsylvania 18705-1099

Attention: Sanitarian Regional Manager

Gentlemen:

I hereby certify that the public drinking water facilities approved under Permit No. 5491509, issued March 25, 1992, have been completed in accordance with the plans and specifications approved by the Department. I also certify that adequate operation and maintenance information for the new or modified facilities is available on site for use by the public water system's personnel.

Yours very truly,

(Signature of Permittee's Representative or Supervising Engineer)

Name: _____
(Please print or type)

Firm or Agency: _____

Telephone Number: () _____

-2-

SPECIAL CONDITIONS

This permit is subject to the following Special Conditions:

- A. Upon completion of construction and in accordance with the approved plans and specifications, the permittee shall submit a Certificate of Construction to the Department. Certification shall state that the work was completed in accordance with the approved plans and specifications and shall be signed by the professional engineer or other person responsible for the work. Certification shall include that adequate operation and maintenance information for the new water supply is available on site for use by the public water supply system's personnel.
- B. The herein approved facility shall be limited to a maximum flow rate of 8 gpm per square foot for each adsorption clarifier and 4 gpm per square foot through each filter. The facility is further limited to a maximum flow rate of 2,160 gpm through the water treatment plant.
- C. The following coagulant aids and corrosion control chemicals are approved for use at the facility. Approval of other coagulant aids or corrosion control compounds or changes in feedpoints of these chemicals requires a permit amendment from this office. Magnifloc 1986N, manufactured by American Cyanamid, polyphos, manufactured by Olin, Aqua-Mag, manufactured by Kjell, Calgon C-9, manufactured by Calgon, Calgon C-10, manufactured by Calgon.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
COMMUNITY ENVIRONMENTAL CONTROL PROGRAM

For Dept. Use Only

Internal Review And Recommendations

Name of Applicant	Municipal Authority of the Borough of Shenandoah	Project Location	Shenandoah Borough Schuylkill County	Application Number	5491509
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BRIEF DESCRIPTION OF PROJECT AND DISCUSSION (Use Additional Sheets If Necessary)

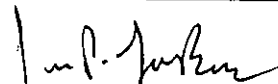

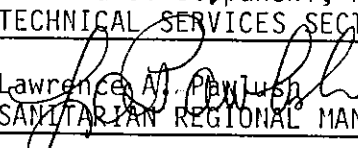
This project provides for the construction of a 3.11 MGD water filtration plant consisting of chemical pre-treatment, contact clarification, mixed media filtration and post-chemical addition to achieve taste and odor control, iron and manganese removal, corrosion control, color reduction and disinfection.

The source of supply is the Ringtown-Raven Run supplies designated as Raven Run No. 2 and 3 and Ringtown No. 5 and 6. The Kehley Run supplies No. 3, 4 and 5 as well as Fetter Lake are to be physically disconnected and taken out of normal active service.

The Ringtown-Raven Run system will be the only sources of supply and are located at the west of Shenandoah. Ringtown No. 6 (270.4 million gallons) is located on Whiskey Mill Creek, a tributary of Little Catawissa Creek. Two miles of 16" pipe transport Ringtown No. 6 water by gravity to Ringtown Reservoir No. 5 (264 million gallons) which is located on Dresher's Run, another tributary of Little Catawissa Creek. Water from Ringtown No. 5 is used to supplement the flow of water to the Raven Run supplies. At night, pump station No. 5 sends water 1.2 miles over Locust Mountain to Raven Run No. 3 through 16" water main. This water is metered. Raven Run No. 3 (70 million gallons) flows into Raven Run No. 2 (32 million gallons). (CONTINUED ON Page 2).

CURRENT ESTIMATE OF COMPLETION DATE OF PROJECT (Industrial Wastes Only)

RECOMMENDATION AND ACTION

Approve Issue By Region	Approve Issue by Central Office	Refuse	Signature	Date
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	James P. LaBuz REVIEWING ENGINEER 	4/1/92
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 Richard J. Stepanski, P.E. TECHNICAL SERVICES SECTION	4/1/92
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 Lawrence A. Pawlisch SANITARIAN REGIONAL MANAGER	4/1/92

Permit Conditions

1. Standard
2. Special (Use Additional Sheets If Necessary)

Ringtown No. 6 has a safe yield of 1.10 MGD. Ringtown No. 5 has a safe yield of 0.7 MGD. Raven Run No. 3 has a safe yield of 0.15 MGD. Raven Run No. 2 has a safe yield of 0.15 MGD. The total safe yield is 2.1 MGD. The safe yield should exceed the estimated future average daily demand. The average daily demand in the design year 2020 is 2.0 MGD which is approximately equal to the current water demand. The same holds true for the maximum daily demand being 3.1 MGD presently, and 2.8 MGD in the design year. The design capacity of the water treatment plant is 3.11 MGD.

The water treatment plant will be located below Raven Run No. 2 Reservoir. The Borough has changed their initial plans which was to breach Raven Run No. 2 Reservoir. All water from Raven Run No. 3 and indirectly from Ringtown No. 5 and 6 which is pumped into Raven Run No. 3 flows through 1,400 feet of existing 20" water main from Raven Run No. 3 to the existing Raven Run treatment building. No treatment is provided presently at this pre-treatment building as per the March 2, 1992 letter from the engineer. From this pre-treatment building, there is 2,000 feet of new 20" water main to the proposed water treatment plant. Prior to entering the water treatment plant, the supernatant recirculation line from the plate settler is pumped to the raw water line going into the building.

A chemical vault is located immediately before the filtration plant for the introduction of potassium permanganate and powdered activated carbon. There is a 12" PVC conduit that carries the potassium permanganate feed line and the spare feed line to the 20" raw water main to the vault located outside the filtration plant. The potassium permanganate room is 10' by 10'. There is a storage area for 2 (750 lb.) drums in the 3' by 10' storage area. The permanganate is in crystalline form. The permanganate is fed by a batch tank and mixer. A 1% solution is used. The batch tank is 200 gallons being 3' in diameter by 4' high. There are two Wallace and Tiernan Model 44-113 dual head chem feed pumps, each with a capacity of 0.1 to 11 gph. The Wallace and Tiernan chem feed pump is flow paced by this 16" flow meter immediately inside the filtration plant. One of these feeders is the spare. The average feed rate is 0.4 mg/l, the maximum feed rate is 1.0 mg/l. At the plant capacity of 3.11 mgd, this equates to an average feed of 6.7 lbs/day and a maximum feed of 27 lbs/day. The permanganate has a weight of between 86 and 102 lbs. per cubic foot. Minimum storage is 1,100 lbs. The permanganate is added for taste and odor control or as a strong oxidizing agent for the oxidation of iron, manganese, color or other parameters that need to be oxidized before filtration. The secondary feed point for potassium permanganate is immediately inside the filtration plant before the pre-chlorine feed.

The second chemical that can be added to the chemical feed vault before the filtration plant is powdered activated carbon. It is used for taste and odor control. Powdered activated carbon is stored in a separate room with the 100 gallon carbon slurry tank, with a bag loader with hopper and mixer. The slurry tank is 2'4" high with dust collector and filters. It also has a loading hopper with a mixer to suspend the carbon at a 1 lb/gallon concentration. This carbon room holds 2,200 lbs. of carbon. The carbon normally comes in 30 lb. bags. There is storage for 74 bags. This is equivalent to 132 days of storage at the average daily demand of 1 mg/l or 16.7 lbs/day. The maximum feed rate is 4 mg/l or 107 lbs/day. Carbon has a weight of 15 lbs/cu. ft. The dissolver is a Wallace and Tiernan Model 32-055, 150 gallons capacity. There are two Wallace and Tiernan Model 44-322 dual head chem feed pumps that feed the carbon slurry (1 lb/gallon) into the chem feed vault for injection. One of these feed lines is a spare. Each feed is rated at 0.1 to 11 gph. The carbon slurry feed is paced by the raw water flow meter. The spare line inside the 12" PVC conduit is required for use by the carbon feeder if used, or by the potassium permanganate, if used. Both potassium permanganate and carbon will not be fed simultaneously to the pre-chem vault. If both chemicals must be used, potassium permanganate will be fed at the vault and power activated carbon will be fed immediately inside the treatment building.

The third chemical introduced is the primary pre-chlorine feed. It is fed before the flow meter. The pre and spare chlorinator are flow paced by a 4-20 ma signal from the raw water flow meter. The chlorinators are a Wallace and Tiernan V-75 rated at up to 200 lbs/day feed capacity. The pre-chlorine rotameter has a feed rate of 1-5 lbs/day minimum with a maximum of 150 lbs/day. The spare chlorinator has a rotameter with a feed rate of 1.5 lbs/day minimum and 15 lbs/day maximum. The rotameters can be field changed and spares are provided. A distribution panel in the chlorine feed room directs chlorine solution from any chlorinator to any of the feed points. Thus, solution from the pre-chlorinator can be directed to the post-chlorine feed points or solution from the post chlorinator can be directed to the pre-chlorine feed point. The spare chlorinator is normally plumbed to a filter room chlorine distribution plant panel with 4 rotameters and solenoid valve that splits and balances the flow of chlorine solution to each filter box influent. This alternate is periodically used to reduce biological growth on top of the filter media. Storage of chlorine is 4 tons, 2 in the switchover position, 1 chlorinator in reserve, and 1 chlorinator empty (see January 6, 1992 letter). The total maximum feed rate is 7.5 mg/l or 200 lbs/day. The average pre-chlorine feed is 1.5 mg/l or 25 lbs/day. The maximum feed is 5 mg/l or 133 lbs/day. A ton container and spare is provided for pre-chlorine. A ton container is provided for post. The spare serves either. Thus, 40-day supply is available at all times.

The fourth chemical added in the treatment plant is lime. It is added for pH and alkalinity adjustment. The primary feed point is between the chlorine feed point and in line mixer. The alternate feed point is between the first and second element of the static mixer. For back-up to the lime, a caustic soda tap is provided. Therefore, a duplicate lime feeder is not provided. The lime is provided in bag form. Minimum delivery is 2,000 lbs. The lime comes in 50 lb. bags. One and one-half pallets are provided. 4,000 pounds are provided which is equal to 80 bags. There are 50 bags of lime per pallet. The weight of lime is 25 to 35 lbs/cu ft. The average feed rate is 5 mg/l. At an average feed rate of 2 mgd, this equates to 83 lbs/day. The maximum feed rate of lime is 15 mg/l. At a maximum flow of 3.11 mgd, this equates to 400 lbs/day. There is (1) Wallace and Tiernan Model 32-055 volumetric lime feeder provided rated at 0.1 to 0.8 CFH. The intent is to adjust raw water pH to between 6.8 and 7.2, which is the most effective range for the primary coagulant, alum to function. The dry volumetric pre-lime feeder adjusts the amount of lime that drops into the dissolver based on the signal sent by the flow meter. The dissolver is 35 gallons capacity. There is a mechanical mixer with jet agitator. The inlet pipe has a flow to maintain constant water level. The water is supplied through jet agitators. A mixer keeps the lime suspended in solution. The SCR drive adjusts the amount of lime dropping into the dissolver. A vibrator prevents packing of lime in the hopper. The water supply to the dissolver via the agitators is a constant 11 to 12 gpm and the amount of lime dropped varies. Thus, the solution strength varies and not the amount of lime solution. An extension hopper provides 6 cu. ft. including the feeder bin or 150 lbs. of lime. The lime feeder is controlled by the raw water flow meter. A pH analyzer after the static mixers sends a signal to the computer for indication, alarm and report generation. The operator can check if the pH range for effective alum coagulation is being maintained. Only one lime feeder is provided. The caustic soda feeder is to serve as a spare for the lime feeder. An alarm will be provided to alert the operators of a mixer break or if they are running out of lime in the hopper.

The next chemical added in the filter plant is alum. It is compound loop controlled. It is paced by the raw water flow and trimmed by the streaming current detector located after the static mixers. The alum is the primary coagulant added in the in-line static mixer between the first and second elements. The alternate feed point is upstream of the mixer. The secondary feed point of alum is into the backwash header during a time period during the filter backwash cycle via a separate feed pump. Alum is provided as 5.48 lbs/gallon. At an average feed rate of 5 mg/l at a flow of 2 MGD, 15 gallons is used. At a maximum feed rate of 20 mg/l and a flow of 3.11

MGD, 97 gallons can be used. The alum storage tank is 6 foot in diameter and 8 foot high. The bulk storage capacity is 1,400 gallons. The required storage is 970 gallons. This is equivalent to 65 days storage at average demand. The day tank is about 2 ft. in diameter by 3 ft. high with the volume of 55 gallons. The chem feed pumps are 2 Wallace and Tiernan Model 44-122 dual head pumps with a capacity of 0.1 to 11 gph. 1 pump is a spare. A third Wallace and Tiernan 45-100 single head pump with a capacity of 0.1 to 10 gph is used to provide alum to the backwash water. A spare is not provided for this chem feed as it is not essential treatment.

The next chemical added is the coagulant aid. It is spec'd as cyanmid magnifloc 1986N, manufactured by Cyanmid approved by EPA as a coagulant aid in the May 8, 1989 listing. The coagulant aid is to be fed at a concentration between 0.1 and 1.0 mg/l. Its primary feed point is between the second and third elements of the static mixer. The alternate feed point is immediately downstream of the mixer. Only one Wallace and Tiernan 44-123 dual head chem feed pump is provided. The pump capacity is between 0.38 and 41.6 gph. The feed is flow paced by SCR Drive from the raw water flow meter. The coagulant aid tank is 3 ft. in diameter and 4 ft. high with a volume of 211 gallons. At an average feed of 0.3 mg/l with a flow of 2.0 mgd, 5 lbs/day is used. At a maximum feed of 1.0 mg/l and flow of 3.11 mgd, 27 lbs/day is used.

The filter aid facility is adjacent to the coagulant aid chem feed pump. The filter aid pump and coagulant aid pumps serve as spares for each other. The less critical chem feed can temporarily be eliminated and the pump removed to serve whichever chemical is more critical. Neither chemical feed is critical to maintaining public health and therefore duplicate feeders cannot be required. The filter aid is fed to a distribution panel that feeds chemicals to each filter influent. This is similar to the chemical distribution panel that feeds chlorine to each filter influent. The approved filter aid chemicals are the same as the coagulant aid being magnifloc 1986N and manufactured by American Cyanamid. The chemical will be added by 1 Wallace and Tiernan 44-123 dual head chem feed pump fed at a concentration between 0.3 mg/l (5 lbs/day) at 2 mgd and 1.0 mg/l (27 lbs/day) at 3.11 mgd.

After the static mixer and the alternate coagulant aid feed point is the CPC microfloc adsorption clarifier unit. This high rate upflow clarifier (maximum flow 8 gpm/sq. ft.) combines flocculation with clarification. The conditioned water flows upward through bouyant plastic beads with coagulated particles being adsorbed onto the surface of the media. The process is enhanced by repeated contact with previously trapped solids. The 4 adsorption clarifiers are each 12 foot wide by 6 foot long and 11 foot deep. There is 4 feet of contact media in each clarifier. The surface area is 72 square feet in each unit. Under normal operation, the water flows upward and the media rises being held in place by a removable media retainer. The maximum loading rate is 8 gal./min./sq. ft. or 576 gal./min./adsorption clarifier or 829,440 gals./unit. There are 4 upflow clarifiers. The treatment plant is not designed for 1 unit being out-of-service. Each clarifier flow is measured and controlled by Venturi meters (4) and influent flow control valves. The clarifier is backwashed based on either high head loss, high clarifier effluent turbidity or time. Clarifier backwash is determined when clarifier effluent turbidity meter measuring backwash to waste water meets established quality guidelines. During backwash of the clarifier, there is a 2 minute air wash timer followed by a 15 minute second air wash timer, an air wash extend button is provided on the AC console, a 1 minute media settlement timer, a 15 minute effluent to waste timer, and an optional 5 minute extend effluent-to-waste timer. The console indicates clarifier flow rate, air flow during backwash, clarifier head loss and clarifier effluent turbidity. When the clarifier is flushed, raw water continues to enter the unit, the diffused air expands the media and the waste goes to an equalizing basin and then to the plate settler and sand drying beds.

After the adsorption clarifiers, the water flows into a common flume. The flow is split into 4 mixed media filters. Prior to entering each filter box, the water can be treated with either filter aid or chlorine as discussed previously. The filtration mixed media consists of the following:

<u>Media</u>	<u>Effective Size</u>	<u>Specific Gravity</u>	<u>Uniformity Co-efficient</u>
Garnet 3"	0.25 to 0.35 mm	3.9 to 4.1	<1.5
Silica Sand 9"	0.4 to 0.5 mm		<1.5
Anthracite 18"	1.05 to 1.15 mm	>1.55	<1.5

The underdrain gravel is 12" as per the March 3, 1992 letter. After the filter aid and chlorine injection points on each 16" clarifier line, there is a 6" stilling well for the filter level transmitter which sends a signal to the filter level controller. No filter aid chemical other than the coagulant aid specified earlier is approved for use. This controller sends a signal to each

filter effluent rate of flow control station. This rate of flow controller must be set not to allow a flow greater than 720 gpm to go through each filter. Only 1 filter backwashes at a time. A filter will not backwash if an adsorption clarifier is being backwashed. The backwash water goes to an equalization basin. Alum is added into the backwash header for a timed period during the filter backwash cycle. At completion of backwash, the filter to waste cycle begins. There is turbidimeter on each filter effluent line (low range 0 to 1 NTU) to record finished water turbidity and to alert the operator when filter to waste can end and the filter can go back into production. The average filter to waste time is 12 minutes. The low wash rate is at 5 gpm/sq. ft. for 3 minutes. The high wash is at 15 gpm/sq. ft. for 8 minutes followed by another 2 minute low wash and then filtered to waste. The low and high wash is preceded by an air wash. There is an extend air button provided for an additional 5 minute period. There is an extend high wash button on the controller panel. The pump from the equalization basin to the plate settler activates the sludge conditioner feed which is introduced to the water from the equalization basin to the plate settler. The sludge conditioner pump is (2) Wallace and Tiernan Model 44-112 single head chem feed pumps rated at a pump capacity of .05 to 5.5 gph. The sludge conditioner is provided in a dry bagged form with a weight between 42 and 48 lbs/cu. ft. On an average, 0.15 lbs/day is required and at maximum, 0.3 lbs/day is required. Storage is not a problem. The backwash water comes from the pump building which is located after the 840,000 storage tank. Backwash and filter-to-waste water goes to an equalization basin which is 100,000 in volume. The size is based on 4 filter backwashes per day and 16 adsorption clarifier backwashes per day at a uniform interval within a 16 hour period. Between 90 gpm and 160 gpm from the equalization basin goes to the plate settler. From the plate settler, the supernatant can be recirculated to the head of the plant or discharged to Lost Creek under an NPDES Permit. The settled sludge from the plate settler goes to the sand drying beds. The settling basin is a Lamella gravity plate settler. The volume includes 3,200 gallons which provide 20 minute detention time at a flow of 160 gpm. The settled sludge pumped to the sludge drying bed averages 220 gpd or a maximum of 350 gpd. It is pumped about 3 times per month. The pumped supernatant to the water treatment plant or discharge to Lost Creek will be 128,000 gpd average or 219,500 gpd maximum. There are 4 sludge drying beds. The filtrate from the bed goes back to the equalization basin. The dried sludge cake disposal will be about 26.5 tons/year and will be by agricultural land disposal or to an approved sanitary landfill.

From the filters there are individual turbidity meters. The individual filter lines join together. Then there is a chlorine residual analyzer that is to record and measure the chlorine residual through the various treatment processes.

In three log removal, this residual analyzer is needed to take credit for time through the piping, clarifiers and filters. The post-chlorination feed point is next. Compound loop controls the post-chlorine feed. The chlorinator is paced by summated finished water flow and trimmed by chlorine residual after the finished water storage tank. The plant capacity is 3.11 mgd which is equivalent to 1 filter being out-of-service. However, there are times that 2,304 gpm can be produced by the adsorption clarifiers and with filters on line, this max flow could possibly go the the clear well. Thus, the maximum flow of the plant is further limited to 2,160 gpm by the operator (see March 16, 1992 letter). A water flow measured by a raw water Venturi flow meter transmits a signal to the main control panel which will include an alarm to signify flow in excess of 2,160 gpm which will alert the operators to adjust the incoming flow. Therefore, the flow of 2,160 gpm will not be exceeded. The storage tank volume available is 20 $\frac{1}{2}$ feet by 84 feet high or 849,775 gallons. At 50% available volume, this is equal to 424,888 gallons. At a peak flow of 2,160 gpm, this is equal to 196.7 minutes of detention. At 50% detention efficiency, this is equal to 98.3 minutes detention. For 1 log removal at pH of 7.5 and chlorine residual of 2 mg/l, a CT of 95 is needed. This is easily met by 98 minutes X 2 mg/l or 196.6 CT being provided. For 3 log removal, the tank volume must never go below 50%. Alarms and controls will allow the operator to maintain levels above 50%. The pH must not exceed 7.5 units as recorded at the post pH residual analyzer. At 3.0 mg/l, minimum chlorine residual, recorded on the post chlorine analyzer after the tank, the CT through the tank is 295.1. The minimum required at that pH and chlorine level is 316. An additional 21 CT is needed. This is achieved by feeding 1 mg/l pre-chlorine at the entrance to the water treatment plant, through the AC units and the filter. This detention time is 46 minutes. With the appropriate detention efficiency, the detention time is reduced to 25.5 minutes. At 1 mg/l chlorine, at the residual analyzer before post-chlorination, the CT is 25.5. This gives the total planned CT of 320.6 which is greater than 316.

Caustic soda is the next chemical introduced. It is provided in a bulk storage tank as a 50% solution. The tank is 5 foot in diameter by 8 foot high with a capacity of 1,180 gallons. There is a day tank for storage of 50% NaOH. The tank has the capacity of 55 gallons being 2 feet in diameter by 3 feet high. There are two positive displacement chem feed pumps being Wallace and Tiernan Model 44-222 dual head pumps. Each pump has a capacity

of between 0.1 and 11 gph. The 50% solution (6.38 lbs/gal. as NaOH) has a weight of 12.76 lbs/gal. At a average flow of 2 mgd, a feed rate of 5 mg/l the daily usage is 13 gpd. At a maximum flow rate of 3.11 mgd, the feed rate of 10 mg/l the maximum usage is 42 gpd. The minimum storage required is 680 gallons and 1,180 gallons is provided in the plant. The primary feed point for caustic soda is the filtered/chlorinated water line in the chem feed and meter chamber. This occurs before the water enters the storage tank. The caustic soda feed is compound loop control. As with other post-treatment chemical feed, it is paced by the summated filter effluent flow signal and this particular feed is trimmed by the pH analyzer. The pH for CT calculations was 7.5 and this resulted in a 316 CT for 3 log removal. During the 3 log inactivation by chlorine alone, the pH must always be less than 7.5. This must be verified by the pH analyzer at the plant effluent. As noted in the March 3, 1992 letter, from Gannett Fleming, 2 feed pumps will be provided to feed caustic soda. 1 feed pump will be operated in the pre or post treatment mode and paced by either raw flow or finished water flow and analyzer. A select switch will be placed on the chemical panel to switch the pump from post to pre or vice versa. The other caustic soda pump will be utilized for post treatment only. In the post treatment mode, feed pumps will be paced by finished water flow and the post pH analyzers.

The last chemical added to the filtered water is phosphate. The applicant has applied for approval to use the following: polyphos manufactured by Olin, Aqua-Mag manufactured by Kjell, Calgon C-9 and Calgon C-10 manufactured by Calgon. All of the above are approved by EPA and are on the May 8, 1989 acceptable drinking water additive list. The phosphate is stored in two tanks of capacity of 55 gallons. Each tank is 2 feet in diameter by 3 feet high. The chemical strength is 1.2%. Each tank has a mixer, the phosphate is fed by 2 Wallace and Tiernan Model 44-112 chem feed pumps with a single head. The pump capacity is between .05 to 5.5 gph. It is controlled by the summated filter effluent flow signal. The polyphosphate is provided in steel drums (100 to 320 lbs/drum). The minimum storage is 3 to 8 steel drums. It is anticipated that it will be mixed in a 1 ppg batch mix. At an average feed of 1 mg/l and flow of 2 MGD, 16.7 ppd is used. At a maximum feed of 3 mg/l and flow of 3.11 MGD, 80 ppd is used. The polyphosphate is added at the storage tank effluent. It is added in the post-treatment building that houses the emergency generator, the post pH analyzer, the post chlorine residual analyzer, the 12" flow meter, post-turbidimeter, the wash water pumps (1 & 2) and the high service pumps (1, 2 & 3). The high service pumps are for plant use and also to supply water to the 20 homes in the Village of Raven Run. There are (two) 100 gpm pumps and (1) 500 gpm pump which is used for the fire hydrant. The 500 gpm pump is activated by a pressure switch. It will activate during any high demand event. All other flow goes to the low service system by gravity.

The storage tank has approximately 850,000 storage volume. It is 84 feet in diameter by 20 $\frac{1}{2}$ feet high. It has the following: 2 roof hatches, 2 steel manholes, a silt stop for a 16" inlet pipe, an overflow pipe with a capacity of 2,250 gpm with mesh aluminum screened at the bottom, a vertical outside ladder, a roof vent with maximum air flow rate of 7,000 cfm. This tank is constructed with a ringwall. Under the tank is 8" of clean sand sprayed with #2 fuel oil at a rate of 0.5 gp/sq. yd. Under this oil saturated sand is a 30 mil PVC liner. Underneath the liner is 4" of clean sand and then compacted aggregate backfill. There is a drain at the bottom of the sand oil saturated layer that rests on the liner. This drain takes sample water via a 1" line to a valve chamber. This sample water can be periodically checked. The tank interior paint is Pennsbury 54-G-161 gray HB epoxy 3 to 4 mils. The finish coat is Pennsbury 54-W-23 white HB epoxy and Pennsbury 54-D-452 sand HB epoxy. Both coats are 4 to 5 mils thick. However, the floor and bottom ring has a 1 finish coat of Pennsbury 52-D-452 sand hippo epoxy applied to a dry film thickness of 8-10 mils. The total dry thickness of tank coating is 11-14 mils. The 54 series paint is both EPA and NSF approved. The 52-D-452 paint recently received NSF approval.

Based on the above, it is recommended that a permit be issued for the use of Raven Run No. 2 and 3 and Ringtown No. 5 and 6 Reservoirs as sources of supply and for the construction of a water filtration plant consisting of pre-treatment with potassium permanganate, carbon, chlorine and lime followed by coagulation with alum. A Neptune microfloc adsorption clarifier (4 units) is followed by rapid sand filters (4 units) and post-chlorination, pH adjustment and phosphate addition. A coagulant aid and/or filter aid may also be used in the process.

Based on the above, it is recommended that the permit application for the above be issued.

It should be noted that the applicant is proposing an EIMCO fixed nozzle underdrain system rather than the conventional filter underdrains or other common proprietary designs such as the Leopold system. A considerable amount of time and correspondence between the regional office and Gannett Flemming transpired trying to discourage the use of this relatively new technology in the water supply industry. The engineer is insistent, and the water supply manual gives them the leeway to construct this system. In spite of my concerns, I have no recourse other than to recommend the EIMCO system for construction.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

Date Prepared
August 1991

5491509
FOR DEPARTMENT USE ONLY

APPLICATION FOR
PUBLIC WATER SUPPLY PERMIT

A. APPLICANT (Name and Address of Water Company)

Municipal Authority of the
Borough of Shenandoah
26-28 West Lloyd Street
Shenandoah, PA 17976

TELEPHONE NO. (717) 462-1904

B. PROJECT LOCATION

Serving Water to the Public within:
Municipality
Shenandoah Borough, Mahanoy Township and
Butler Township

County
Schuylkill County

C. HEREBY APPLIES FOR APPROVAL OF
PLANS AND PERMIT
OF THE FOLLOWING:

FOR: 1. Use as Source of Supply Construction Operation

4. SOURCE

Well(s) Spring(s)
 Stream Lake
Ringtown Reservoirs Nos. 5 & 6;
Known As Raven Run Reservoir Nos. 2 & 3
on Lost Creek

5. FACILITIES

Impoundment Disinfection
 Settling Pump Station(s)
 Filtration Transmission Lines
 Iron Removal Distribution Storage
 Softening Distribution System

I hereby certify that the completeness report and all plans, modules, and documents designated therein are attached to this application, and made a part hereof.

Joseph Tancredi
Name of Responsible Water Company Official

Name of Responsible Water Company Official

Mr. Joseph Tancredi

Title
Authority Chairman

Date of Application
August 1991

Address

Municipal Authority of the Borough of Shenandoah
26-28 West Lloyd Street, Shenandoah, PA 17976

AFFIDAVIT

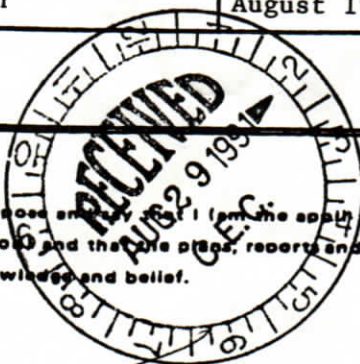
Commonwealth of Pennsylvania, County of Schuylkill

I, Joseph Tancredi, being duly sworn, according to law, depose and say that I (am the applicant) (am an officer or official of the applicant) (have the authority to make this application) and that the plans, reports and documents submitted as part of the application are true and correct to the best of my knowledge and belief.

Sworn and Subscribed to before me this
15th Day of August, 1991

Notarial Seal
Kathryn Lynch, Notary Public
Shenandoah Boro, Schuylkill County
My Commission Expires May 29, 1994

Joseph Tancredi
Name of Responsible Water Company Official
Authority Chairman



THE SECTION BELOW IS TO BE COMPLETED BY THE DESIGN ENGINEER AUTHORIZED BY THE APPLICANT TO PREPARE THIS APPLICATION

Name of Design Engineer and Firm

James L. Long, P.E., Vice President and Chief Engineer
Gannett Fleming, Inc.

Mailing Address

Water Resources and Geotechnical Division
P. O. Box 1963, Harrisburg, PA 17105-1963

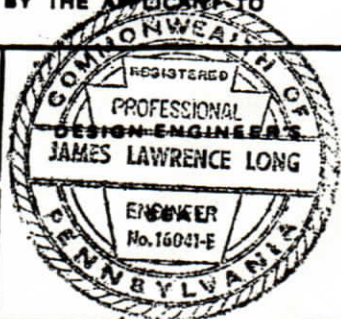
Telephone Number

(717)
763-7211

Agreement Date

Signature of Design Engineer

James L. Long



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF COMMUNITY ENVIRONMENTAL CONTROL

PUBLIC WATER SUPPLY PERMIT

No. 5491509
Minor Amendment

<p>A. PERMITTEE: (Name and Address) Municipal Authority of the Borough of Shenandoah 26-28 West Lloyd Street Shenandoah, PA 17976</p>	<p>B. PROJECT LOCATION Municipality <u>Shenandoah Borough</u> County <u>Schuylkill</u></p>			
<p>C. THIS PERMIT APPROVES FOR: 1. <input type="checkbox"/> Use as Source of Supply 2. <input checked="" type="checkbox"/> Construction 3. <input type="checkbox"/> Operation</p>				
<p>AS INDICATED BELOW:</p> <table style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> <p>4. Source</p> <p><input type="checkbox"/> Well(s) <input type="checkbox"/> Spring(s) <input type="checkbox"/> Stream <input type="checkbox"/> Lake</p> </td> <td style="width: 33%; vertical-align: top;"> <p>5. Facilities</p> <p><input type="checkbox"/> Impoundment <input type="checkbox"/> Settling <input type="checkbox"/> Filtration <input type="checkbox"/> Iron and Manganese Treatment <input type="checkbox"/> Softening <input type="checkbox"/> Fluoridation <input checked="" type="checkbox"/> Other <u>Bypass around 0.85 mg tank</u></p> </td> <td style="width: 33%; vertical-align: top;"> <p><input type="checkbox"/> Stabilization <input type="checkbox"/> Disinfection <input type="checkbox"/> Pump Station(s) <input checked="" type="checkbox"/> Transmission Lines <input type="checkbox"/> Distribution Storage <input type="checkbox"/> Distribution System</p> </td> </tr> </table>		<p>4. Source</p> <p><input type="checkbox"/> Well(s) <input type="checkbox"/> Spring(s) <input type="checkbox"/> Stream <input type="checkbox"/> Lake</p>	<p>5. Facilities</p> <p><input type="checkbox"/> Impoundment <input type="checkbox"/> Settling <input type="checkbox"/> Filtration <input type="checkbox"/> Iron and Manganese Treatment <input type="checkbox"/> Softening <input type="checkbox"/> Fluoridation <input checked="" type="checkbox"/> Other <u>Bypass around 0.85 mg tank</u></p>	<p><input type="checkbox"/> Stabilization <input type="checkbox"/> Disinfection <input type="checkbox"/> Pump Station(s) <input checked="" type="checkbox"/> Transmission Lines <input type="checkbox"/> Distribution Storage <input type="checkbox"/> Distribution System</p>
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<p>KNOWN AS _____</p>				
<p>YOU ARE HEREBY AUTHORIZED TO USE AS SOURCE(S) OF SUPPLY, CONSTRUCT OR OPERATE, AS INDICATED ABOVE, PROVIDED THAT FAILURE TO COMPLY WITH CHAPTER 109, ARTICLE II, OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.</p> <p>NO DEVIATIONS FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING THE TREATMENT PROCESS OR QUALITY OF WATERS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT.</p> <p>THIS PERMIT IS ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES UNDER THE AUTHORITY OF THE PENNSYLVANIA SAFE DRINKING WATER ACT, THE ACT OF MAY 1, 1984 (P.L. 208, NO. 43). OPERATION SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 109 ADOPTED UNDER THE AUTHORITY IN SECTIONS 4 AND 8(a) OF THE PENNSYLVANIA SAFE DRINKING WATER ACT.</p> <p>THIS PERMIT IS SUBJECT TO THE ATTACHED SPECIAL CONDITIONS <u>1 and 2</u></p> <p>THIS PERMIT IS SUBJECT TO THE FOLLOWING STANDARD CONDITIONS RELATING TO EROSION CONTROL _____</p>				
<p>PERMIT ISSUED Date <u>April 10, 1997</u></p>	<p>DEPARTMENT OF ENVIRONMENTAL RESOURCES By <u>Lawrence A. Pawlush</u> Lawrence A. Pawlush Title <u>Program Manager</u> Water Supply Management Program</p>			

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

Public Water Supply Permit No. 5491509 Minor
Amendment No. 1

SPECIAL CONDITIONS

1. Upon completion of construction and in accordance with the approved plans and specifications, public water supplier shall submit a Certificate of Construction to the Department. Said Certification shall state that the work was completed in accordance with the approved plans and specifications. It shall be signed by the professional engineer or other person responsible for the work. Certification shall include that adequate operation and maintenance information for the new facility is available on site for use by the public water systems personnel.
2. The public water supplier, prior to the initiation of operation, shall have retained a certified operator, with the proper class license, to operate the public water supply system.