



MAR 13 2017

Mr. Bob Deffner  
Department of Conservation and Natural Resources  
Gifford Pinchot State Park  
Lewisberry, PA 17365

Re: Public Water Supply  
Permit No. 6702502  
PWSID No. 7670801  
APSID No. 365002  
Gifford Pinchot State Park  
Warrington Township, York County

UPDATED  
PERMIT  
MAR 2017

GIFFORD PINCHOT  
STATE PARK

MAR 15 2017

RECEIVED

Dear Mr. Bob Deffner:

Issuance of the enclosed revised operation permit is authorized in accordance with the provisions of the laws of the Commonwealth.

Your attention is directed to the Special Conditions included as part of this permit. The treatment facilities shall be operated in accordance with these Special Conditions to provide an additional 1-log treatment of for *Cryptosporidium*.

The Department reviewed the Bin determination report Gifford Pinchot State Park (Park) submitted on August 6, 2012. **Based on the available information, we concur that the Lake Pinchot at the Park's intake is classified as a Bin 2 source with a *Cryptosporidium* concentration of 0.116 oocysts/L.**

**Since the Pinchot Lake at the Park's intake is classified as a Bin 2 source, the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2) requires additional *Cryptosporidium* treatment at this time. As a supplier using a Bin 2 source, the Gifford Pinchot State Park Membrane Treatment Plant is required to provide an additional 1 log (90%) treatment for *Cryptosporidium*, thereby providing a total of at least 4-log (99.99%) treatment of the *Cryptosporidium* present in the Lake Pinchot source water.**

**Since the Park will provide the additional 1 log (90%) *Cryptosporidium* treatment using its existing, previously permitted Gifford Pinchot State Park Membrane Treatment Plant, Operation Permit No. 6702502 has been modified to incorporate special conditions relative to this additional treatment.**

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, PO Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals

Mr. Bob Deffner  
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and Natural Resources

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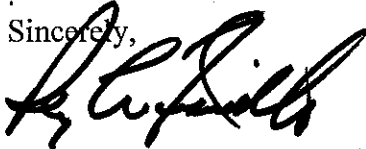
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must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure 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, please call Mr. Michael Hess, P.E. at 717.705.4155.

Sincerely,



Rodney L. Nesmith, P.E.  
Program Manager  
Safe Drinking Water Program

Enclosures

cc: Mr. John Tovcimak, Department of Conservation and Natural Resources

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF SAFE DRINKING WATER

**PUBLIC WATER SUPPLY PERMIT**

NO. 6702502

A. PERMITTEE: (Name and Address)

**Department of Conservation and Natural Resources  
Rachel Carson State Office Building  
P.O. Box 8451  
Harrisburg, PA 17105-8451**

B. PROJECT/PLANT LOCATION

Municipality Warrington Township  
County York

C. THIS PERMIT APPROVES FOR: 1.  CONSTRUCTION  
AS INDICATED BELOW:

2.  OPERATION OF FACILITIES

Approved Under Construction Permit No. 6702502

<u>Source</u>	<u>Facilities</u>	<u>BVRB</u>
<input type="checkbox"/> Well(s)	<input type="checkbox"/> Impoundment	<input type="checkbox"/> Bottled Water System
<input type="checkbox"/> Spring(s)	<input type="checkbox"/> Settling	<input type="checkbox"/> Bulk Water Hauling System
<input checked="" type="checkbox"/> Surface Water	<input checked="" type="checkbox"/> Filtration	<input type="checkbox"/> Vended Water System
<input type="checkbox"/> Finished Water	<input type="checkbox"/> Iron and Manganese Treatment	<input type="checkbox"/> Retail Water Facility
	<input type="checkbox"/> Softening	
	<input type="checkbox"/> Fluoridation	
	<input type="checkbox"/> Distribution Facility	
	<input type="checkbox"/> General Corrosion Control	
	<input type="checkbox"/> Corrosion Control for Lead/Copper	
	<input checked="" type="checkbox"/> Disinfection	
	<input checked="" type="checkbox"/> Pump Station(s)	
	<input checked="" type="checkbox"/> Transmission Lines	
	<input checked="" type="checkbox"/> Finished Water Storage	
	<input checked="" type="checkbox"/> Other <u>Intake structure</u>	

KNOWN AS: Gifford Pinchot State Park Water System - Bin 2 Requirements

**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: 1 through 9

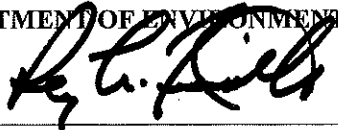
PERMIT ISSUED

**MAR 13 2017**

This permit supersedes Permit No. 6702502,  
which was issued on May 10, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By

  
Rodney L. Nesmith, P.E.

Title Program Manager

SAFE DRINKING WATER PROGRAM  
Department of Conservation and Natural Resources  
Gifford Pinchot State Park  
Operation Permit No. 6702502

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This permit is issued subject to all Department of Environmental Protection Rules and Regulations now in force and the following Special Conditions:

1. The capacity of this membrane filtration plant is limited to a maximum of 65 gallons per minute (gpm). This condition may be modified with the installation of additional HYDRAcap 60-LD ultrafiltration membrane modules with prior written Department approval.
2. The permittee shall retain the services of a properly certified water operator for the Gifford Pinchot State Park public water system. If for any reason the permittee loses the services of that properly certified operator, they shall employ a new, properly certified operator within 10 days.
3. Operators shall conduct indirect integrity testing via on-line turbidity monitoring of the permeate. The permeate from each individual membrane skid shall be monitored using a laser turbidimeter. Such monitoring shall include measurement and recording of the permeate turbidity at least once every fifteen (15) minutes that the system is operated. All test results shall be recorded and maintained on site.
4. Operators shall conduct direct integrity testing via off-line pressure hold testing of the system at least once per day, or fraction thereof, when the system is operated. The system shall not be returned to service until system integrity has been confirmed by a successful direct integrity test within the established control limits as per Special Condition No. 5 below. All test results, including testing date, testing time, filtrate flow ( $Q_p$ ), Temperature (T), Air-Liquid Conversion Ratio (ALCR), Transmembrane Pressure (TMP used in the ALCR equation), starting pressure, ending pressure, Pressure Decay ( $\Delta P_{Test}$  used in the LRV equation), membrane integrity (pass/fail) and Log Removal Value (LRV) shall be recorded and maintained on site.

The test results shall be summarized in a monthly report and submitted to the Department by the 10th day of the following month. Submit the monthly report to the Department's Safe Drinking Water Program at:

Department of Environmental Protection  
Safe Drinking Water Program  
Technical & Financial Services Section  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

5. Failure to comply with any of the following operational control limits shall cause the programmable logic controller (PLC) to initiate immediate shutdown of the affected membrane train:

For indirect integrity testing via continuous on-line turbidity monitoring:

- A. The permeate turbidity exceeds 0.15 NTU and stays above 0.15 NTU for any 15-minute period based on continuous turbidity monitoring. In the event that a turbidity reading falls below the 0.15 NTU threshold for at least 1-minute during any 15-minute period, the timer resets.

For direct integrity testing:

- B. The minimum direct integrity test pressure ( $P_{Test}$ ) shall not be less than 17.61 psi at any time during the test. Any portion of the direct integrity pressure test during which the system pressure falls below 17.61 psi shall not be included in determining the log removal value (LRV). If the direct integrity test pressure does not stay as 17.61 psi, or greater, for a minimum of 120 seconds, the test is failed.

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- C. The log removal value (LRV) is less than 4.00. The LRV shall be determined through direct integrity testing in accordance with Special Condition Nos. 4, 6 and 7 to verify membrane integrity with a resolution of no more than 3 microns ( $\mu\text{m}$ ) for *Cryptosporidium* removal credit as required by the Long Term 2 Enhanced Surface Water Treatment Rule.

The filtration system shall not be returned to service until operators have investigated the control limit exceedance resulting in shutdown and taken follow-up corrective actions to resolve the problem. All corrective actions shall be recorded and reported to the Department as per Special Condition No 4.

The permittee may petition the Department, in writing and stating just cause after commencement of operation, to change any of the operational control limits specified above. However, control limits may not be changed until the Department approves the request in writing.

6. Operators shall also conduct pressure hold testing of the system before placing it back into service after any non-routine shutdown. The system shall not be returned to service until system integrity has been confirmed by a successful direct integrity test within the established control limits as per Special Condition No. 5. For purposes of this condition, a routine shutdown includes normal cycling of the membrane equipment caused by rising and falling water levels within the clearwell, which, is referred to as STANDBY mode. A non-routine shutdown is any shutdown that is not routine including, but not limited to, those caused by exceedance of any control limit specified in Special Condition No. 5, periods of inactivity caused by maintenance, repair, chemical cleaning or extended (greater than 24 hours) non-use. Operators shall record data for all non-routine direct integrity tests and report this data to the Department as per Special Condition No 4.

Following the direct integrity test (required for any non-routine shutdown), the membrane train will be placed back into service. During the first 20 minutes of operation, the PLC will capture representative values for flow ( $Q_p$ ) and TMP. This data, along with other necessary data captured during the direct integrity test, shall be used to calculate LRV. If the calculated LRV is greater than or equal to (pass) the LRV operational control limit, the train may remain in service. If the calculated LRV is less than (fail) the LRV operational control limit, the PLC shall initiate immediate shutdown of the train and necessary corrective action shall be taken by the operator.

7. Operators shall measure and record the pH of the water within the membrane system after each chemical cleaning is completed to make certain that all cleansers have been adequately flushed. The membranes may not be returned to service until the permeate pH is within 1 pH unit of the raw.
8. The permittee shall create and maintain a set of chlorine contact time (CT) tables for operator's use. That set of tables shall identify the minimum Entry Point chlorine residual needed to achieve 1 and 3-log post-filtration *Giardia* inactivation. Those tables shall assume a  $T_{10}/T$  of 0.5 in the clearwell and a maximum flow rate of 75 gallons per minute (gpm). The tables shall also consider the various possible water levels in the clearwell. The tables shall be provided for the range of pH and temperatures that can reasonably be seen in the finished water.
9. The membrane filtration system PLC shall be programmed to operate in accordance with the operational control limits specified in the permit application, Special Conditions and Table 1. Operators shall review and verify operational control limits and associated alarms frequently enough to avoid inadvertent violations due to erroneous control limit set points.

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**Table 1**  
**Membrane Filtration System Operational Control Limits and Parameters**

Parameter	Control Limit	PLC Action	Comment
$Q_P$ (maximum flow)	65 gpm (246 L/min)	Alarm	Permit Control Limit. $Q_P$ is for each unit based on 6 modules.
Flux (design)	24 gfd	N/A	The design flux rate is 24 gallons per square foot per day (gfd).
Permeate Turbidity	0.15 NTU	High-High Alarm and Shutdown	Permit Control Limit.
Start- $P_{Test}$ (minimum initial starting test pressure)	$\geq 17.61$ psi	Failed PDT	The minimum initial starting test pressure (Start- $P_{Test}$ ) is 17.61 psi.
$P_{Test}$ (minimum)	$\geq 17.61$ psi	Failed PDT	Permit Control Limit. The minimum required $P_{Test}$ value is 17.61 psi. The $P_{Test}$ duration is 2 minutes.
LRV Calculation	$\geq 4.00$ LRV	LRV Low-Low Alarm and Shutdown	The LRV calculation is performed immediately after the unit is returned to forward flow. Calculated using MFGM Equation 4.9.
ALCR	N/A	System Generated	The Air Liquid Conversion Ratio (ALCR) is calculated using $ALCR = 149.59 * TMP^{0.5912}$ .
$V_{sys}$ (per Unit)	38.4 gal @ 6 modules 35.2 gal @ 5 modules 32.0 gal @ 4 modules 28.9 gal @ 3 modules 25.7 gal @ 2 modules	Hard Coded	The installed modules are HYDRAcap 60-LD ultrafiltration modules. Each module has a volume of 12.1 L. $V_{sys}$ is for each unit consisting of the # modules and associated hold-up piping (19.3 gal).
$A_{sys}$ (per Unit)	$\sim 3,630$ ft <sup>2</sup>	Hard Coded	$A_{sys}$ is for each unit consisting of 6 modules. Each module has a surface area of 605 ft <sup>2</sup> .
VCF	1.0	Hard Coded	Volumetric Concentration Factor (VCF) is based on deposition mode.
$P_{atm}$	14.7 psi	Hard Coded	Atmospheric pressure.
BP (back pressure)	3.04	N/A	Maximum backpressure during the PDT.
$\theta$ (liquid-membrane contact angle)	0°	N/A	Liquid-membrane contact angle used to determine minimum $P_{Test}$ .
TMP (transmembrane pressure)	psi	System Generated	Used in ALCR calculation.