



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

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October 17, 2022

Mr. Joseph Yetman  
DCR Wompatuck State Park  
30 Shipyard Drive  
Hingham, Massachusetts 02043

RE: HINGHAM-Public Water Supply  
DCR Wompatuck Mt. Blue Spring  
PWS ID#: 4131001,  
BRP WS 25A, Water Treatment Facility  
Modifications,  
Transmittal #X289203

Dear Mr. Yetman:

The Southeast Regional Office of the Massachusetts Department of Environmental Protection (MassDEP), Drinking Water Program, is in receipt of plans and specifications for the reconfiguration of the public water supply delivery system and public access at the Mt. Blue Spring located within Wompatuck State Park in Hingham, Massachusetts.

Please find attached the following information: Approval of the Water Treatment System Modifications.

Please note that the signature on this cover letter indicates formal issuance of the attached document. If you have any questions regarding this matter, please contact Giliane Tardieu at (508) 946-2789.

Sincerely,

Jim McLaughlin, Chief  
Drinking Water Program  
Bureau of Water Resources

DWP Archive\SERO\HINGHAM-4131001-System Modifications-2022-10-17 WS25

ec: [Priscilla.geiges@mass.gov](mailto:Priscilla.geiges@mass.gov)  
[Joseph.yetman@mass.gov](mailto:Joseph.yetman@mass.gov)  
[sarnis@hingham-ma.gov](mailto:sarnis@hingham-ma.gov)  
[Japrea@RHwhite.com](mailto:Japrea@RHwhite.com)  
Dformato@onsite-eng.com

Scott Sayers, DEP-SERO  
Courtland Ridings, DEP-SERO  
Katie Sousa, DEP-SERO  
Haotian Wang, DEP-SERO

This information is available in alternate format. Contact Glynis Bugg at 617-348-hour-4040.

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Wompatuck State Park Mt. Blue Spring  
Hingham, Massachusetts  
PWS ID#4131001  
BRP WS25A, Treatment Facility Modification  
Transmittal X289203

The Massachusetts Department of Environmental Protection (the Department or MassDEP) is in receipt of plans and specifications for the reconfiguration of the public water supply delivery system and public access at the Mt. Blue Spring located within Wompatuck State Park in Hingham, Massachusetts. The spring is owned and operated by the Massachusetts Department of Conservation and Recreation (the PWS). The application was submitted on behalf of the PWS by Onsite Engineering of Franklin, Massachusetts. The application was received by the Department's Southeast Regional Office on August 26, 2022 and bears the seal and signature of David C. Formato, a Massachusetts Registered Professional Engineer P.E. No. 45030.

Department personnel reviewed the following application documents for conformance with the Department's Drinking Water Regulations, 310 CMR 22.00 ("Regulations") and "Guidelines and Policies for Public Water Systems" (the "Guidelines"):

1. Transmittal for Permit Applications #X289203, received on August 26, 2022.
2. Specifications entitled "BRP WS 25- Water Treatment Facility Modification for Wompatuck State Park, Mt. Blue Spring (PWS ID#: 4131001), Hingham, Massachusetts."

Background: This project is being undertaken by the PWS to address public water supply safety issues noted by the Department relative to past coliform detections and future potential for compromised water quality that is being caused by the current configuration of the spring. In addition, access by the public to the fill taps at the spring is currently limited to those persons without disabilities due to the tap locations. The spring is currently not in use because of ongoing water quality issues related to unsafe levels of bacteria since the spring box, as currently configured, cannot be safely sealed from animal access without a complete reconfiguration of the pump and disinfection systems.

The existing concrete doghouse over the spring box and the existing fill station building will be demolished. The spring box cover will have a water-tight hatch installed and be completely sealed to prevent water contamination issues. A new vent pipe, with sealed penetration will also be installed. A new treatment building will be constructed in the same footprint as the existing fill station building. Two PVC water inlet pipes between the spring box and the new treatment building will be installed. A new stick-built wooden shed building in the same location as the old fill station building will be constructed.

The water supply equipment will be located inside the new building and the proposed fill stations will be located on the outside of the building for unencumbered public access. A total of four (4) fill stations will be installed with two of them ADA compliant and two suitable for general public access. All fill stations will be smooth nose style fill taps and/or exterior mount bottle fill stations neither of which allow for the connection of hoses or tubing. A backflow prevention device will be located inside the water treatment equipment room on the feed line to all fill station taps.

Proposed Water System:

- Two 2-inch schedule 80 PVC pipes will be installed from the clearwell to the fill station building. One of the pipes will be connected to the pump inlet, the other will be provided for redundancy but will be valved off when not in use.
- A new Goulds ¾ hp, model JRS7 jet pump capable of providing 15 gpm at 40 psi will be installed. The jet pump will transfer water from the clearwell to two Flex hydropneumatic tanks

Inima USA/Aquaria LLC  
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and a UV disinfection system. Two jet pumps will be provided for redundancy. The pump selection will alternate as selected by the certified operator.

- A 20-inch long sediment filter will be installed prior to the hydropneumatic tanks to remove sediment larger than 5 microns in size. Pressure gauges will be installed on the inlet and outlet piping of the sediment filter.
- A dedicated water meter and smooth nose sample tap will be installed after the cartridge filter and prior to the tanks and UV disinfection.
- Two (2) Flex Lite Model FL12 Flexcon hydropneumatic tanks will be provided. Each tank will have a capacity of 35 gallons. The tanks will provide pressurized water to the filling stations.
- The UV disinfection system will be Hydro-Optic System Model number RZ104-11, NSF certified, manufactured by Atlantium Technology, Ltd. The unit has a flow rate of 15 gpm and consists of a stainless steel 42-inch x 4-inch chamber lined with a minimum 10 mm thick quartz sleeve that is used as the main disinfection chamber. A flow control valve will be provided in advance of the UV unit to prevent the flow rate from exceeding 15 gpm. The lamps are housed in a protective quartz sleeve. The RZ104 Series Hydro-Optic™ UV system features the unique Total Internal Reflection technology that recycles UV light energy in order to ensure homogenous UV dose distribution to enable achieving certified 4-log removal. The UV system is featured on the list of MassDEP approved Technology List, the approval date is January 14, 2016. The PWS is not seeking 4-log removal at this time.
- A tap will be provided prior to the hydropneumatic tanks for emergency chlorine injection.

#### APPROVAL CONDITIONS

Pursuant to the Department's authority under 310 CMR 22.04(7) to require that each supplier of water operate and maintain its system in a manner that ensures the delivery of safe drinking water to consumers, this approval is made subject to the following conditions:

1. Prior to being placed in service, the treatment facility including all pumps, piping, valves, and appurtenances, shall be disinfected in accordance with AWWA standards.
2. Following disinfection of the completed treatment facility, a water sample shall be collected and analyzed for coliform bacteria and volatile organic compounds (VOC) by a Massachusetts certified laboratory. A copy of the laboratory analysis shall be provided on standard Department forms to the Department for review and approval prior to the final inspection.
3. Construction shall be in strict accordance with the submitted plans. No changes shall be made without prior written approval of the Department.
4. Submit a new Revised Total Coliform Rule (RTCR) sampling plan.
5. An Operation and Maintenance (O&M) manual, including a spare parts list and parts order form shall be supplied to the owner/operator of the PWS for the treatment plant. An electronic PDF copy of the Operation and Maintenance manual shall be submitted to the Department fourteen days (14) prior to start up of the treatment facility. This O&M manual shall contain information necessary for the operator of the water supply system to properly operate and maintain said system in accordance with the "Guidelines", Policy 93-02.

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6. The PWS shall maintain a copy of this letter, a copy of the plans and specifications, and a copy of the O & M manual at the respective treatment facilities.
7. Instrumentation, monitoring equipment and alarm systems must be properly maintained and calibrated at all times. Separate calibration logs for each instrument/monitor must be maintained.
8. The following shall be prepared and available on site prior to the Department's final inspection: emergency contact sheet, and applicable quarterly alarm testing logs.
9. The Department has determined in accordance with 310 CMR 22.11(B) that the new water treatment facilities will be classified as a Class I-T Water Treatment Facility. The regulations require that the facility be properly staffed during all shifts when the facility is in operation, unless exempted by the Department in writing pursuant to 310 CMR 22.11(B)(5) for satellite or automated operations. To demonstrate compliance with the staffing requirements of 310 CMR 22.11(B), the PWS shall submit a staffing plan for the new facility to the Department for its approval at least 30 days prior to the anticipated startup of the new facility.
10. A request for Final inspection shall be submitted to this office in accordance with the Guidelines and Department Policy 88-19. During the inspection the PWS shall demonstrate the efficiency of the treatment process, interlocking, and the operation of the instrumentation system.
11. The PWS shall prepare a contingency plan to allow for continued operations in the event of failures of any of all the equipment installed as part of this project.
12. The Department recommends assessing the vulnerability of the equipment and including the results of the assessment in any security planning.
13. Prior to the Department's final inspection, a Massachusetts Registered Professional Engineer shall submit a stamped certification of the completed works. The certification shall be accompanied by the following:
  - a. A statement certifying that the facilities have been constructed in accordance with the plans and specifications, and are in compliance with the Department's regulations, guidance, policies, and this approval.
  - b. A statement that the facilities are fully operational, tested and ready to be put on-line.
  - c. A statement certifying that the piping and facilities have been disinfected in accordance with the applicable ANSI/AWWA standards.

The Department has completed its Administrative and Technical Review of permit application BRP WS25A, transmittal # X289203.