

**Vermont Department of Environmental Conservation
Drinking Water and Groundwater Protection Division**

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Agency of Natural Resources

March 30, 2017

Dorset Fire District #1
Attn: Denise Tuttle
509 Peace Street
Dorset, VT 05251

Re: Sanitary Survey, Dorset Fire District #1 Water System, Public Community Water System, Dorset, VT
WSID # 5020

Dear Ms. Tuttle:

A sanitary survey of the Dorset Fire District #1 Water System (Water System) was conducted on February 28, 2017. Heather Collins and Patrick Smart represented the Vermont Department of Environmental Conservation, Drinking Water and Groundwater Protection Division (Division); Jim McGinnis, the Water System Operator, and Greg Kepler, of Kepler Consulting LLC, represented the Water System. The Water System was issued a Permit to Operate (PTO) on August 11, 2013. The PTO does not have an expiration date, although the PTO will be amended by this Division as deemed necessary over time.

During the sanitary survey and file review the following significant deficiencies were identified; and need to be corrected:

- 1. Inadequate Water Supply:** Under Chapter 21, Section 7.7.1 of the Vermont Water Rule (Rule), “A Public water system shall provide an adequate supply of potable water during average and peak user demand periods on a sustained basis to all users.” Also, under Chapter 21, Section 7.7.2 of the Rule, “If a Public water system is unable to reliably and consistently produce an adequate supply of potable water from permitted non-emergency sources to meet normal and peak demands, the owner shall immediately begin planning for and implementing the development and connection of new permitted sources to meet average and peak user demands.” The Water System’s existing spring sources do not have established yields and are known to be adversely affected by drought conditions. During the fall of 2016 the Water System was forced to routinely depressurize portions of the distribution system overnight due to decreased spring yields; the water system was not able to reliably and consistently meet the water demands of its existing users. As the Water System lacks the source capacity required to meet the water demands of the system’s existing users, the Division has determined that the **Water System is no longer permitted to expand water service to new connections or to provide increased water use allocations to existing users** (see Comment A for further details).

The Division acknowledges that the Water System is working with Kepler Consulting, LLC on a source exploration project that will hopefully result in the Water System developing approved sources with permitted yields that are adequate to meet the current and anticipated future needs of the Water System. As part of this project, the Water System will be required to obtain Source Permit(s) and Permit(s) to Construct. Please contact Dennis Nealon, Division Hydrogeologist, at dennis.nealon@vermont.gov or 802-585-4909 with any questions regarding the source permitting process. Please contact Cindy Parks, Division Engineer, at cynthia.parks@vermont.gov or 802-585-4913 with any questions regarding Permits to Construct. **On or before May 10, 2017, the Division requests that the Water System provide a description of its proposed source improvements plan**

and a proposed project schedule to the Division for review and approval.

2. **Inadequate Monthly Reporting:** Per Section IV.B.1 of the Water System's Permit to Operate, "*The Permittee shall submit a signed report to the Division once a month, no later than ten (10) days following the end of the month, with the following information: a) A summary of the Public Water System operation, including the amount of water produced daily for each source. Water production summaries shall contain metered data; and b) Daily disinfectant residual entering the distribution system for each day that disinfectant is introduced.*" The Water System has not been collecting and reporting daily disinfectant residual concentrations. Options for the location and means of recording the daily disinfectant residual are discussed in item 3, below. **On or before May 10, 2017, the Water System must submit a monthly operating report that represents the period from April 1 to April 30, 2017. The Water System must continue to submit monthly operating reports as required by the Rule and the PTO.**

3. **Daily Chlorine Residual Sample Point** Per Section IV.B.1 of the Water System's Permit to Operate, "*The Permittee shall submit a signed report to the Division once a month, no later than ten (10) days following the end of the month, with the following information: a) A summary of the Public Water System operation, including the amount of water produced daily for each source. Water production summaries shall contain metered data; and b) Daily disinfectant residual **entering the distribution system for each day that disinfectant is introduced.***" During the survey, the Water System reported that free chlorine measurements were typically collected by drawing a bucketful of water from the storage tank. This sample collection method is unacceptable and is not representative of treated water entering distribution (following disinfection contact time). There is a blow off valve installed on the transmission main that connects the storage tank to the distribution system, this blow off valve is located approximately 800 feet from the transmission main's intersection with the distribution system at West Road. During the survey, the Division and the Water System observed this blow off valve, and discussed that this blow off is an acceptable location to measure the daily free chlorine concentration present in the treated water. **The Division requests that the Water System immediately begin recording daily free chlorine concentrations as measured from the finished water transmission main blow off located near West Road.**

Additionally, the Division requests that on or before July 1, 2017, the Water System install a sample tap and improve accessibility of this sampling location in accordance with the conditions provided in the Division's March 13, 2017 letter regarding the Water System's planned minor modifications to install meters and a sampling tap near this valve pit.

The following items are provided for the Water System's review, consideration, and comment:

- A. **System Expansion is Prohibited:** As described by deficiency #1 above, the Water System's sources are unable to consistently and reliably meet the water demands of the system's existing users. Accordingly, the Division has determined that the Water System does not have any reserve capacity, and is prohibited from adding new service connections or increasing water use allocations to existing users. The Division intends to issue an amended Permit to Operate in the near future that will formalize this prohibition, and will contain a compliance schedule for resolution of the deficiencies identified in this letter. The Water System's current source exploration project, if successful, will likely result in a water supply with sufficient reserve capacity to allow for future water system expansion.

- B. **Fire Protection and Conversion of Fire Hydrants:** The Division understands that several fire hydrants installed on the distribution system are not capable of providing the minimum flow (500 gpm for two hours) and residual pressure (at least 20 psi throughout distribution) requirements of the Rule. As discussed during the sanitary survey, the Division understands that the Water System has

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taken short term measures to ensure these inadequate hydrants are not used during fire events; these measures include welding the steamer nozzles shut, painting the hydrants black, and notifying the fire department that the hydrants are not suitable for fire protection uses. These actions have functionally converted the fire hydrants to flushing hydrants. The Division assumes that this conversion of fire hydrants to flushing hydrants has been performed as an interim measure, and that the Water System intends to perform distribution system improvements so that these fire hydrants can be returned to fire protection service. The Division requests that the Water System provide a proposed preliminary project schedule for completing these improvements and returning these hydrants to fire protection service.

- C. Fire District Meetings:** As discussed during the survey, Pat and I would welcome the opportunity to attend one of the Fire District's meetings to discuss the contents of this letter report, the planned water system improvements, or any other topic concerning the Water System, should the Fire District feel such a conversation would be helpful.
- D. Planned Metering and Instrumentation Improvements to the Dorset Fire District 1 Water System:** As stated in the Division's March 13, 2017 letter, the Division finds that the proposed system improvements are minor modifications as described by Chapter 21, Section 4.02 of the Vermont Water Supply Rule (the Rule). Accordingly, the Water System is not required to obtain a Permit to Construct before completing these improvements.

The Division requests that the Water System provide a written response to the items above by **April 30, 2017**. The written response should indicate that the compliance dates above are acceptable or provide alternative dates for review and approval. In the absence of a written response as requested, the Division may amend the Permit to Operate to include a compliance schedule to resolve these deficiencies.

I appreciate Jim and Greg meeting with us in order to conduct the sanitary survey of the Dorset Fire District #1 Water System. I look forward to working with all of you in the future. If you have any questions or would like to discuss anything regarding the survey, please feel free to contact me at the address above, by email at heather.collins@vermont.gov, or by phone at 802-461-3722.

Sincerely,



Heather Collins
System Operations Specialist

- C: Jim McGinnis, Water System Operator, WSID #5020
Greg Kepler, Kepler Consulting, LLC
Patrick Smart, System Operations Supervisor, DWGWP
Allison Murphy, Capacity Development Program Specialist, DWGWP
Ashley Lucht, DWSRF Project Manager, FED
Dennis Nealon, Division Hydrogeologist, DWGWP
Cynthia Parks, Division Engineer, DWGWP
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