



The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner



July 11, 2023

Transmitted via Email to seanaldenpeters@gmail.com

Sean Peters
10 Lee RD, LLC
1 Bayside Road, Unit 101
Greenland, NH 03840

**Subject: Water Conservation Plan Approval
Madbury – Madbury Woods Apartments (PWS ID#: 1456020)
Water Conservation Plan, NHDES # 005914**

Dear Sean Peters:

On June 28, 2023, the New Hampshire Department of Environmental Services (“NHDES”) Drinking Water and Groundwater Bureau received a Water Conservation Plan (the “WCP”), signed on June 28, 2023, for Madbury Woods Apartments, located in Madbury, New Hampshire. Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from NHDES for new sources of groundwater shall submit a water conservation plan to NHDES. Based on review of the WCP, NHDES has determined the WCP complies with Env-Wq 2101, *Water Conservation* rules.

Pursuant to Env-Wq 2101.25, the Town of Madbury and the Strafford Regional Planning Commission were provided a copy of the WCP, along with other required materials. NHDES received confirmation of public notification on July 10, 2023.

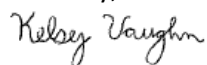
NHDES approves the WCP based on the following conditions:

1. No later than the source activation date, a meter shall be installed for each source of water prior to treatment.
2. Upon source activation, source meters shall be read monthly—no sooner than 27 days and no later than 33 days from the last meter reading.
3. All meters shall be installed per the manufacturer’s instructions or American Water Works Association standards.
4. Upon source activation, all meters shall be tested and maintained based on the schedule proposed in the WCP.
5. Upon source activation, monthly source production volumes shall be reported to the NHDES Water Use Registration and Reporting Program on a quarterly basis. NHDES will assign the system a Water Use Identification Number and provide instructions for registering as a data provider and utilizing the NHDES OneStop reporting tool.

6. Within one year of source approval, a water conservation outreach program shall be implemented in accordance with the WCP.
7. No later than one year from the date of source approval, a distribution meter capable of measuring flows less than 1 gallon per minute shall be installed, and night flow analysis shall commence at a rate of twice a year in accordance with the night flow analysis methodology in the WCP.
8. All leaks shall be repaired within 60 days of discovery, or an alternative timeframe for the leak repairs shall be submitted to NHDES within 30 days of discovery.
9. From the date of this approval, all non-metallic pipes installed in the system shall be outfitted with detectable tracer tape or detectable tracer wire, or be GPS located and maintained in a GIS system.
10. Every 3 years from the date of this approval, a *Water Conservation Plan Ongoing Compliance Reporting Form* shall be submitted to NHDES, documenting how the system has maintained compliance with the WCP. A link to the reporting form is on the *Water Conservation* page on the [NHDES website](#). The following records shall be maintained by the water system to include with the report:
 - a. A leak log, including the date a leak was discovered, the date a leak was repaired, the type of leak (ex. water main, service line, hydrant, valve, apartment fixture), the approximate size of the leak (gpm), and the nearest address to the leak.
 - b. A log of water efficiency outreach activities.
 - c. Date of installation and replacement of all meters as well as testing and calibration records.
 - d. Data from twice-yearly night flow analyses and a brief summary of the analyses.
11. Proposed changes to the WCP shall not be implemented unless approved by NHDES.

Please contact me with any questions at [\(603\) 271-6685](tel:6032716685) or via e-mail at waterconservation@des.nh.gov.

Sincerely,



Kelsey Vaughn
Water Conservation Program
Drinking Water and Groundwater Bureau

ec: James Petrovitsis; 10 Lee RD, LLC (jspetrovitsis@gmail.com)
Christian Kofer; Aqua Specialties, LLC (ckofer@aqua-specialties.com)
Gene Schrager; GS Environmental and Groundwater Associates (geneschrager@yahoo.com)
NHDES Community Well Siting Program (communitywell@des.nh.gov)
NHDES Water Use Registration and Reporting Program (wateruse@des.nh.gov)

WATER CONSERVATION PLAN
Madbury Woods Apartments

A community water system seeking authorization for a new source of water must submit a water conservation plan (WCP) to the New Hampshire Department of Environmental Services (NHDES) for approval. The WCP must demonstrate how the water system proposes to comply with water conservation standards pursuant to Env-Wq 2101, *Water Conservation* rules. Madbury Woods Apartments is an existing landlord owned community water system.

Activities outlined in this WCP will be completed by water system personnel under the supervision of a certified water system operator.

I. Introduction

A. Contact Information

1. Name and location of system:
Madbury Woods Apartments in Madbury (PWSID 1456020)
2. Owner of system and mailing address:
Sean Peters
10 Lee RD LLC
1 Bayside Road Unit 101
Greenland, NH 03840
3. Name and mailing address of preparer of WCP:
Gene Schrager, P.G.
PO Box 4247
Portsmouth, NH 03802

B. System Overview

1. Description of the community being served:
The property is comprised of apartments for student housing. Currently, the water system serves 3 buildings with 10 apartments, housing approximately 40 people. Additional apartments will be built over the next few years, which will bring the number of apartments to 19 apartments. Currently, there is shared laundry in the basement of two of the buildings.
2. Description of water sources, including water sources to be developed for non-potable uses such as irrigation:
The system is currently served by a bedrock well (BRW1). This well will be abandoned after the proposed well (BRW2) is installed, tested, approved, and put into service. There are no current or proposed irrigation uses.
3. Name designation of each proposed water source and any existing sources:
BRW1: existing source (will be abandoned once BRW2 is put online)
BRW2: proposed source
4. Number of existing connections for each of the following classes:
 - a) Residential: 10 units in 3 buildings (current); 19 units in 3 buildings (proposed)

- b) Industrial/Commercial/Institutional: 0
- c) Municipal: 0
- 5. The water system does not provide water to any consecutive water systems or privately owned redistribution systems.
- 6. There are no connections that receive more than 20,000 gallons per day (gpd).
- 7. The following information is based on metered source withdrawal volumes from the last complete year.
 - Year: 2021
 - Average daily use (ADU): 728 gpd
 - Lowest ADU in the winter: 359 gpd
 - Highest ADU in the summer: 1,017 gpd

C. Transfer of Ownership

- 1. The system ownership may be transferred in the future.

II. System Side Management

A. Water Meters

1. Source Meters

- a) No later than the source activation date, a meter will be installed on each new and any existing, active water source.
- b) An irrigation well is not proposed.
- c) Meter information for each proposed and existing water source:
 - A new meter will be installed to measure production volumes from BRW2. The size, make, and model of the meter will be determined during the pump house design.
- d) No later than the source activation date, source meters will be read at least monthly.

2. Meter Selection, Installation, and Maintenance

- a) All meters will meet the American Water Works Association (AWWA) standards.
- b) The selected size of the meters will be based on projected flow rates.
- c) Meters will be installed as specified by the manufacturer, including requirements for horizontal or vertical placement, distance of straight run of pipe upstream and downstream of the meter, and strainer installation. If the manufacturer does not supply installation specifics, meters will be installed in accordance with the "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance" (AWWA, 2012).

- d) The following meter testing and calibration schedule or meter change-out schedule will be implemented. If the manufacturer’s accuracy warranty extends beyond the schedule below, the meter will be tested or changed-out no later than the warranty expiration date.

Meter Size (inches)	Testing Rate (years)
Less than 1	10
1 to 2	4
3	2
Greater than 3	1

- e) A log of the dates that meters were installed, tested, calibrated, repaired, and replaced will be maintained. Testing reports and calibration certificates will be kept on file.

B. Pressure Management

1. The design pressures of the system are from 45 psi to 65 psi.

C. Leak Detection and Repair

1. All non-metal pipes will either be GPS located and stored in a GIS system or equipped with detectable tracer tape or detectable tracer wire during new installation.
2. Leak detection will be conducted in accordance with the “Manual of Water Supply Practices M36, Water Audits and Loss Control Programs” (AWWA, 2016).
3. Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.23.
4. A log of all leaks will be maintained, including the date the leak was discovered, the date the leak was repaired, the type of leak (ex. service, main, hydrant, valve, fixture), the size of the leak (gpm), and the nearest street address or unit number for the leak.

D. Water Loss Minimization- Night Flow Analysis

1. Night flow analysis will be implemented no later than one year from the date of source approval.
2. The system will conduct a night flow analysis at least twice a year.
3. A distribution meter capable of measuring flows less than 1 gallon per minute (gpm) will be installed on the distribution line and located after treatment, any other water-consuming processes, and storage. Distribution meter information:
 The make, model, and size of the proposed distribution meter will be determined during the pump house design. A data logger for this meter is also proposed.
4. See Appendix C for the night flow analysis methodology.

III. Consumption Side Management

A. Educational Outreach Initiative

1. No later than one year from the date of source approval, the system will begin distributing water efficiency outreach materials to residents. These outreach materials will be posted in common areas and laundry rooms as appropriate and will also be distributed annually to each apartment (potentially with the lease renewal).

Water efficiency messaging for these water users will typically include looking for fixture leaks, reporting fixture leaks to the property management, and using water efficiently for daily activities, such as showering, washing dishes, and washing clothes.

The materials distributed will be NHDES Water Efficiency Fact Sheets (<https://www.des.nh.gov/resource-center/publications?keys=efficiency&purpose=&subcategory=Water+Conservation>) and EPA WaterSense materials (<http://www.epa.gov/watersense/>).

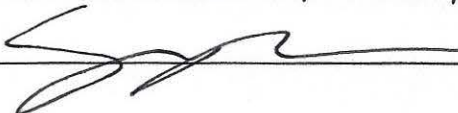
2. The system will maintain a log indicating how the system has complied with III. A.1., above. The log will include the dates that outreach and education actions were taken and what was done.

IV. Reporting and Implementation

- A. The water system will submit a form supplied by NHDES once every three years from the date of the water conservation plan approval documenting how compliance with the requirements of this water conservation plan and Env-Wq 2101, *Water Conservation* rules, is being achieved.
- B. The data collected with each night flow analysis from the previous three years, as well as a statement for each night flow analysis as to whether a leak was suspected or not, will be submitted with the report form in IV.A., above.
- C. Upon source approval and receiving a Water Use Identification Number from NHDES, the water system will report monthly production volumes quarterly to the NHDES Water Use Registration and Reporting Program. "Monthly" means once every calendar month, but no sooner than 27 days after and no later than 33 days after the previous reading.

I certify that I have read this Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Owner Name (print): SEAN PETERS, MEMBER, 10 LEE RD, LLC

Owner Signature:  Date: 6-28-23

Appendix A Definitions

Authorized metered consumption: the volume of consumption authorized by the water supplier that is metered. It consists of billed metered consumption plus unbilled metered consumption.

Community water system (CWS): a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Consecutive water system: a public water system that buys or otherwise receives some or all of its finished water from one or more wholesale systems for at least 60 days per year.

Final source approval: the date of final well siting approval or the date of issuance of the large groundwater withdrawal permit.

Large community water system: a community water system that serves more than 1,000 persons.

Privately owned redistribution system (PORS): a system for the provision of piped water for human consumption that does not meet the definition of a public water system and meets all of the following criteria:

- (1) Obtains all of its water from, but is not owned or operated by, a public water system; (2) serves a population of at least 25 people, 10 household units, or 15 service connections, whichever is fewest, for at least 60 days per year; and (3) has exterior pumping facilities, not including facilities used to reduce pressure, or exterior storage facilities that are not part of building plumbing.

Public water system (PWS): a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Small community water system: a community water system that serves 1,000 persons or fewer.

Source activation date: the date that the source is placed into use.

System input volume: the volume of water input to the water supply system corrected for known errors, which is equal to the volume of water derived from the water system's own sources, minus water consumed by treatment processes, plus water imported or purchased, minus water exported, plus or minus the net change in water storage (where applicable and significant).

Water balance: the difference between the system input volume and authorized metered consumption.

Water conservation: any beneficial reduction in water losses, waste, or use.

Wholesale system: a public water system or an industrial, commercial or institutional (ICI) water user that treats source water and then sells or otherwise delivers finished water to a consecutive water system or privately owned redistribution system.

Appendix B Notification Process

Public Notification Instructions

Once a final draft of the water conservation plan is agreed upon by the applicant and NHDES, NHDES will either send a signature line to the applicant for addition to the plan or NHDES will insert the signature line into the final draft of the water conservation plan and send the plan to the applicant. NHDES will also send the applicant a [summary of the main requirements of Env-Wq 2101](#).

Within 10 working days of receiving the summary from NHDES, the applicant is required to provide a copy of the water conservation plan and rules summary via certified mail with return receipt requested to:

- the governing board of the municipality in which a proposed source is located,
- the governing board of all municipalities that receive water from the water system (if any),
- the governing board of all wholesale customers of the water system (if any), and
- the regional planning commission serving the location of the proposed source.

The applicant must also request that the governing board(s) amend local site planning requirements to reflect the requirements of Env-Wq 2101 and to promote water conservation landscaping for new projects.

All signed copies of the certified mail return receipts (green cards) must be forwarded to NHDES along with the final, signed water conservation plan before approval of the water conservation plan will be issued.

Notification of Consecutive Water Systems and Privately Owned Redistribution Systems

Within 5 working days of obtaining final source approval, the system is required to notify any consecutive water systems or privately owned redistribution systems to which it delivers water of the following:

- The projected source activation date; and
- The system will be subject to Env-Wq 2101 as of the source activation date and should contact the NHDES Water Conservation Program using the contact information below.

New Hampshire Department of Environmental Services
Drinking Water and Groundwater Bureau
Water Conservation Program
PO Box 95
Concord, NH 03302-0095
[\(603\) 271-0659](tel:6032710659)
waterconservation@des.nh.gov

Appendix C
Night Flow Analysis Methodology

1. Distribution Meter

- a. A meter capable of measuring flows less than 1 gallon per minute (gpm) will be installed on the distribution line and located after treatment, any other water-consuming processes, and storage.
- b. The meter make, model, and size will be forwarded to NHDES prior to purchase/installation for review and approval.

2. Determining Baseline Flow

- a. Baseline flow will be determined when the system is tight. The system will be considered tight when:
 1. A leak detection survey is conducted and all leaks discovered are repaired; or
 2. An initial night flow analysis is conducted and the lowest flow is less than 2 gpm.
- b. The results of the initial night flow analysis and the proposed baseline flow will be submitted to NHDES for review.

3. Night Flow Analysis

- a. Night flow analysis will be conducted at least twice a year and no sooner or later than 6 months apart.
- b. Water usage will be recorded every minute for one hour during a period of anticipated low water demand using a distribution meter (between 1 am and 3 am is recommended). Prior to the night flow analysis, users of the system will be requested to refrain from using water during the date and time of the scheduled night flow analysis. Night flow analysis will be conducted prior to sprinkler season.
- c. If the lowest flow is above the baseline flow, then water usage will continue to be recorded every minute for an additional hour.
- d. If the lowest flow is more than 2 gpm above the baseline flow, a leak will be suspected.
 1. All residents will be asked to check their units for leaking toilets, sinks, and showerheads. The previous steps will then be repeated in 3 days. If the lowest flow is still above the baseline flow, the actions in Steps 2 and 3 below will be taken.
 2. Select portions of the system will be isolated and evaluated by closing valves while monitoring the change in flow as measured by the distribution meter. For example, when one valve is closed, the person in the field operating the valve will then communicate with a second person observing the distribution meter to monitor for a change in the background flow.
 3. If the leakage has been narrowed down to a specific building, an inspection of units for leaks in the building will be conducted to find the leak. If the leakage has been narrowed down to the water lines, a sub-contractor skilled in acoustic leak detection will be retained and will assist with pinpointing the leak(s).
- e. Records will be maintained of each night flow analysis, including recorded flows and leak repair results.