



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

WATER CONSERVATION PLAN APPROVAL

November 2, 2016

Robert Sullivan
Tylincon Properties LLC
P.O. Box 10483
Bedford, NH 03110

RE: Deerfield – Cornerstone Place (PWS ID #: 0594010)
Water Conservation Plan, NHDES # 140076

Dear Mr. Sullivan:

On July 28, 2016, the New Hampshire Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau received a Water Conservation Plan (the “WCP”), signed on July 26, 2016, for Cornerstone Place located in Deerfield, New Hampshire. Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from DES for new sources of groundwater shall submit a water conservation plan to DES. Based on review of the WCP, DES has determined the WCP complies with Env-Wq 2101, *Water Conservation* rules.

Two waivers have been requested in accordance with Env-Wq 2101.23, as follows:

1. A waiver to Env-Wq 2101.16 *Minimization of Water Loss and Water Waste for Specified Systems* has been sought. Cornerstone is a 14 unit apartment building and domestic use is low – 66 gallons per unit per day. There is no outdoor irrigation system. The largest potential for waste is the reverse osmosis system. The reverse osmosis system will be serviced yearly and the amount of water pumped from the well will be compared to the amount of water rejected by the reverse osmosis system for efficiency tracking and maintenance.
2. A waiver to Env-Wq 2010.17 *Education and Outreach Program for Specified Systems* has been requested. Average water use per unit is low in comparison to general averages.

Pursuant to Env-Wq 2101, the Town of Deerfield and the Southern New Hampshire Planning Commission were provided a copy of the WCP.

DES approves the WCP and the waivers requested based on the following conditions: (Note* This Water Conservation Plan Approval is an after-the-fact approval for an existing system and

all conditions are considered active upon the date of the WCP Approval unless otherwise specified.)

1. By January 1, 2017, all source meters and the meter measuring reject water shall be installed.
2. By January 1, 2017, a photo of the meter installed to measure the reject water, as well as the make, model, and size of the meter shall be forwarded to Kelsey Vaughn at Kelsey.Vaughn@des.nh.gov.
3. All meters shall be read on a monthly basis - no sooner than 27 days and no later than 33 days from the last meter reading.
4. All meters shall be tested and maintained based on the schedule proposed in the WCP.
5. All meters shall be installed per the manufacturer's instructions or American Water Works Association standards.
6. The total monthly volume withdrawn from each source and discharge shall be reported to DES on a quarterly basis. DES has assigned Cornerstone Place **WU ID # 21010** and added BRW 2 as a source and the reject water as a destination. The first quarter report is due by **March 15, 2017**. The water system shall register as a data provider and utilize the DES OneStop reporting tool to submit water use data. Instructions for registering and using the tool are enclosed with this letter. If you have any questions about Water Use Registration and Reporting or registering as a data provider, please call (603) 271-6685.

(The primary operator for Cornerstone Place, Sarah Duffy, is already an authorized data provider. If Ms. Duffy is retained to report to the Water Use and Registration Program for Cornerstone Place, do not register as described above, instead call (603) 271-6685 or email stacey.herbold@des.nh.gov to provide authorization.)

7. Leaks shall be repaired within 60 days of discovery.
8. Every three years from the date of this approval, a *Water Conservation Plan Ongoing Compliance Reporting Form* shall be submitted to DES documenting how the system has maintained compliance with the WCP. The following records shall be maintained by the water system to include with the report:
 - a. A monthly comparison of water pumped from the well and reject water from the reverse osmosis system, with backwash water considered.
 - b. Maintenance records for the reverse osmosis system, indicating filter changes.

- c. Date of installation and replacement of all meters, as well as testing and calibration records.
9. Revisions to the Plan shall not be implemented without further approval from DES.
10. The waiver shall be valid for no more than 4 years from the date of this WCP Approval. Prior to the expiration of the waivers, a new waiver request shall be sought to be considered for an extension of the original waiver approval.

The *Water Conservation Plan Ongoing Compliance Reporting Form* may be located by going to the DES website, www.des.nh.gov, clicking on the "A-Z List" in the top right corner of the page, and scrolling down to Water Conservation

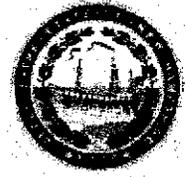
Please feel free to contact Kelsey Vaughn with any questions at (603) 271-0659 or via e-mail at kelsey.vaughn@des.nh.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Stacey Herbold". The signature is written in a cursive style with a large initial "S" and "H".

Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

cc: Sarah Duffy, Granite State Analytical
Town of Deerfield
Southern New Hampshire Regional Planning Commission
Christine Bowman, NHDES
Steve Roy, NHDES



WATER CONSERVATION PLAN: CORNERSTONE PLACE
May 2016

RSA/Rule: RSA 485:61/Env-Wq 2101

A community water system seeking authorization for a source of water must submit a water conservation plan to the New Hampshire Department of Environmental Services (NHDES) for approval demonstrating how the water system proposes to comply with water conservation standards pursuant to Env-Wq 2101, *Water Conservation* rules. Cornerstone place is a new small community water system and is landlord owned, which is required to comply with the WC rules related to "specified systems".

As Cornerstone Place is a small apartment building which does not have a network of distribution pipes subject to leakage or water usage outside typical residential water usage and the building's reverse osmosis system & water softener, pursuant to Env-Wq 2101.23, a waiver is being sought to Env-Wq 2101.16 *Minimization of Water Loss and Water Waste for Specified Systems*. In lieu of complying with Env-Wq 2101.16, the amount of water being pumped from the well will be compared to the amount of water being rejected from the reverse osmosis system to monitor efficiency of the system and make repairs when necessary. The reverse osmosis system will reject a variable amount of process water depending on influent water quality (salinity), influent pressure and temperature.

As tenant water usage at Cornerstone Place is less than the average, a waiver is being sought to Env-Wq 2010.07 *Education and Outreach Program for Specified Systems*, or more specifically to promoting water efficiency to residents. Average water use per unit was approximately 66 gallons per day (gpd) between 10/20/2014 and 10/1/2015. The current usage is 134 gallons per unit per day as of May, 2016. This includes water losses related to installation of the reverse osmosis system, which have a significant rejection rate. The national average water use per person is 100 gallons per day and in New Hampshire is 75 gallons per capita per day.

Below are further details related to the above, as well as maintenance of the meters, water efficiency education and outreach to tenants, and reporting to NHDES.

I. Introduction

A. Contact Information

1. Name and location of system: Cornerstone Place, Deerfield, NH
2. Owner of system and mailing address:
Robert Sullivan, Tylicon Properties Inc.
PO Box 10483
Bedford, NH 03110

B. System Overview

1. Brief description of the project and water sources, including water sources to be developed for non-potable uses such as irrigation:

Cornerstone Place is a 14 unit apartment building, which is considered a community water system based on the number of tenants in the building. Cornerstone Place has an existing well, which it is coming in for an after-the-fact approval for. Water use is for domestic use and the reverse osmosis system and softeners.

2. Name designation of water source: BRW 2

3. Number of connections

a) Residential: 14 single and two bedroom apartments

II. System Side Management

A. Water Meters

1. Source and Other System Side Meters

a) The meter on the existing water source:

Install date: September 2014

Make: Badger

Model: Recordall Model 40

Size: 1"

Accuracy Warranty: 15 years

b) A meter will be installed on the RO backwash line to measure reject water. The water softeners use a set amount of water to backwash and can easily be deducted from the totals on the source meter and RO backwash meter. The meter will be:

Make: REPCO Standard Effect Hall Meter

Model: Bub-080

Size: 1"

Accuracy Warranty: unknown

2. Meter Selection, Installation, and Maintenance

a) All meters will be AWWA certified, unless the proposed meter is a magnetic flow meter, which will need approval for use from NHDES before installation.

b) The selected size of the meters will be based on projected flow rates.

c) The following meter testing and calibration schedule will be implemented or the accuracy warranty of the meter. BRW 2 has a warranty of 15 years.

Meter Size (inches)	Testing Rate (yr)
<1"	10 yrs
1" - 2"	4 yrs
3"	2 yrs
>3"	1 yr

a) A log of the date meters were installed, tested, calibrated, repaired, and replaced will be maintained and calibration certificates will be kept on file.

2. Reverse Osmosis System Efficiency

a) Details of reverse osmosis system: The RO information is as follows:

Make: Applied membranes Inc

Model: L-54A-216 SN: 7196-15193000 L Series Commercial RO

b) Once a year the RO will be serviced by McBrides Water Advantage. There is also a built in feature that will alarm once the membrane or pre-filter have reached their lifespan. The amount of reject water will vary and adjustments will not need to be made other than a membrane exchange or pre-filter change.

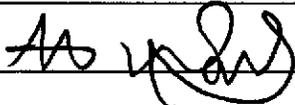
III. Reporting and Implementation

A. The water system will report monthly production volumes and rejected reverse osmosis volumes quarterly to the NHDES Water Use Registration and Reporting Program upon receiving a Water Use ID number. Monthly means once every calendar month, but not sooner than 27 days after and no later than 33 days after the previous reading.

B. The water system will submit a report to NHDES once every three years documenting how compliance with the requirements of Env-Wq 2101 *Water Conservation* and the water conservation plan are being achieved. The following will be included with the report:

1. The analysis between rejected RO water and volume pumped for each year;
2. Maintenance to the RO system as result of the above comparison; and
3. Testing/calibration records for the meters.

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): Robert Sullivan for Cornerstone place, LLC
 Owner Signature:  Date: 7/26/16

Appendix A Definitions

Authorized metered consumption: billed metered water plus unbilled metered water.

Community water system (CWS): a public water system which 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 which 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 a least 60 days per year; and (3) has exterior pumping facilities, not including facilities used to reduce pressure, or exterior storage facilities which 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 people or less.

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

System input volume: the volume of water input to the water supply system after treatment, analysis, and storage.

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 distribution system.

Appendix B
Notification Process

Public Notification Instructions

Within 10 days of submitting the conservation plan to NHDES, the applicant is required to provide a copy of the plan via certified mail with return receipt requested to the governing board of the municipality in which a proposed source is located, all municipalities that will receive water from the water system (if any), all wholesale customers (if any), and the regional planning commission serving the location of the proposed source. In most cases, only the municipality and the regional planning commission will require notification. All signed copies of the certified mail return receipt (the green card) must be forwarded to NHDES.

Additional Attachments

The applicant must provide the governing boards with a summary of the requirements of Env-Wq 2101, which may be found at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm, and request that the governing board amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency.

Notification of Consecutive Water Systems and Privately Owned Redistribution Systems

Within 5 working days of obtaining final approval of the source from NHDES, the system is required to notify any consecutive water system or privately owned redistribution system receiving water from the system, that pursuant to Env-Wq 2101.13, the systems must implement a water conservation plan and should contact the NHDES Water Conservation Program using the contact information below.