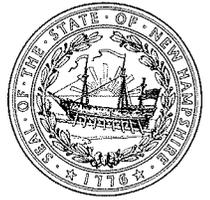


The State of New Hampshire  
**Department of Environmental Services**

**Thomas S. Burack, Commissioner**

*Celebrating 25 Years of Protecting  
New Hampshire's Environment*



**WATER CONSERVATION PLAN APPROVAL**

November 9, 2012

Sullivan County Complex  
c/o John Cressy, Facilities Director  
5 Nursing Home Drive  
Claremont, NH 03743

**RE:** Unity – Sullivan County Complex (PWS ID #: 2384010)  
Water Conservation Plan, November 6, 2012, NHDES # 999728

Dear Mr. Cressy:

On November 8, 2012, the New Hampshire Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau received a Water Conservation Plan (the “Plan”), dated November 6, 2012, for the Sullivan County Complex located in Unity, 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 Plan, DES has determined the Plan complies with Env-Wq 2101.06, *Requirements for Existing Small Community Water Systems*.

Pursuant to Env-Wq 2101.11, the Town of Unity and the Upper Valley Lake Sunapee Regional Planning Commission were provided the opportunity to comment on the Plan from October 15, 2012, the date of public notification, through November 5, 2012. DES received no comments.

On **November 9, 2015**, and every three years thereafter, the water system shall submit a detailed and completed compliance report form to DES documenting compliance with the Plan. Required information includes contact information for the water-system owner and for the individual responsible for carrying out plan tasks; dates tasks were performed; and data relating to meter reading, water audits, leak detection, and public outreach. A copy of the *Water Conservation Plan Ongoing Compliance Form* may located by going to the DES website, [www.des.nh.gov](http://www.des.nh.gov), clicking on the “A-Z List” in the top right corner of the page, and scrolling down to Water Conservation.

Revisions to the Plan shall not be implemented without further approval from DES.

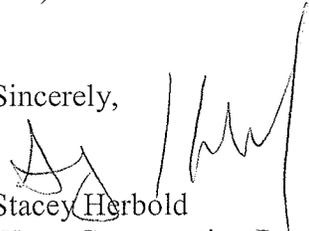
[www.des.nh.gov](http://www.des.nh.gov)

29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095

Telephone: (603) 271-2513 • Fax: (603) 271-5171 • TDD Access: Relay NH 1-800-735-2964

Please feel free to contact me with any questions at (603) 271-0659 or via e-mail at [stacey.herbold@des.nh.gov](mailto:stacey.herbold@des.nh.gov) .

Sincerely,



Stacey Herbold  
Water Conservation Program  
Drinking Water and Groundwater Bureau

cc: Diana Morgan, NHDES  
Selectman, Town of Unity  
Upper Valley Lake Sunapee Regional Planning Commission  
Claude Cormier, HydroSource Associates, Inc

# Water Conservation Plan

Sullivan County Complex

Unity, New Hampshire

October, 2012

Revised 11/6/2012

## I. Introduction

### A. Contact Information:

#### 1. Name and Location of System:

Sullivan County Complex, County Farm Road, Unity, New Hampshire

#### 2. Owner of System and Mailing Address:

Sullivan County Complex  
5 Nursing Home Drive  
Claremont, New Hampshire 03743

#### 3. Name and Mailing Address of Designer of the Water Conservation Plan:

John Cressy, Facilities Director  
5 Nursing Home Drive  
Claremont, New Hampshire 03743

### B. System Overview

#### 1. Reason for new source:

Supplement declining yield of current wells.

#### 2. Number of connections existing and proposed for each of the following classes:

a) Residential: 0

b) Institutional: 265 beds

c) Municipal: 0

#### 3. Description of any connections that currently receive or will receive more than 20,000 gpd: The facility uses on average 20,000 gpd.

### C. Water Use Trends and Supporting Data / Population Trends

#### 1. Existing, if applicable, and anticipated seasonal fluctuation in water use and reason for fluctuation: Variable based upon occupancy.

#### 3. Maximum day yield of existing sources based on 24-hour pumping: ~19,000 gpd

#### 4. Average daily water use: ~20,000 gpd

#### 5. Maximum daily water use: ~35,000 gallons

#### D. Meters

Each well is currently metered at point of entry, as will be the new well. Each building at the facility is also already metered at the point of entry. These meters are read and recorded every week.

1. **Name designation of each water source:** Wells 5, 6 and (proposed) 7
2. **Meter make, model, size, flow range, and date of last calibration for each existing source meter:**

##### Point of use

Sullivan County Nursing Home  
Amco- Elster 4 inch  
Model #T4000  
Serial # 18337490  
Date of install / calibration 7/24/2008

Department of Corrections  
Sensus MTR 2 inch  
Part #T21XXXXXG1GAXX  
Serial # 71755001  
Date of install/calibration 5/4/2010

##### Source

DH-5  
Rockwell W-160 2 inch  
Serial # 1320652

DH-6  
Badger Meter 2 inch  
Model 170  
Serial # 98779574  
Date of install/calibration 8/8/2007

3. **Meter make, model, size, and flow range for each new water source (if known):** To be determined.
4. **Frequency that source meters will be tested/calibrated:** Meters will be tested/calibrated per AWWA/PUC standards as follows:  
5/8" & 3/4" = 10 years  
1" - 2" = 4 years  
3" = 2 years  
4" & 6" = 1 year

If the accuracy of a meter is warranted beyond that of the AWWA/PUC testing interval, then the meter will be tested/calibrated upon expiration of the accuracy warranty and moving forward will continue to be tested/calibrated pursuant to the AWWA/PUC schedule.

5. **Frequency that source meters will be read (at least every 30 days):** Several times per month.
6. We understand that source meters should be selected, installed, and maintained in compliance with "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance," (American Water Works Association, 1999).

## **II. System Side Management**

### **A. Metering and Water Accounting**

The difference between the amount of water flowing in from the wells and into the buildings is then cross-checked to evaluate leakage. Given the facility's chronic water shortages and the importance of sufficient water supply to maintain health and safety of the residents, this has already been ongoing for many years, and is done frequently in an attempt to conserve as much water as possible.

#### **1. Service Meters**

**a. How many un-metered connections exist?**

One – the Ahern Building (used for meetings, etc.) – Will be metered within three years.

**b. Will separate irrigation meters be installed?** N/A – no irrigation

**c. All unmetered connections will be metered within 3 years.**

**d. Frequency that service meters will be read (at least every 90 days):** No less than monthly. Usually weekly or more often.

**e. Description of all methods that will be used to read service meters:** Direct read by water system operator.

**f. Expected number of days needed to read all service meters:** < 2 hours.

**g. Proposed rate of meter testing and/or meter change out:** Beginning in 2013 all source meters will be tested and/or calibrated on a four year rotation as required by NHDES.

**h. We will strive to select, install and maintain meters in accordance with "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance," (American Water Works Association, 1999).**

**B. Leak Detection** For years and by necessity due to its chronic past water shortages, the Sullivan County Complex has been very conservative with their water use and is and will continue to be very diligent and conscientious about leak detection. SCC currently does, and will continue to monitor, on a regular basis, for leaks and/or other practices that waste water. Interior leaks are identified during monthly environmental rounds, by housekeeping staff and by

general staff by way of the maintenance “hot line” and the work order system. Source meters will continue to monitor source meters no less than monthly. Usage trends are reviewed for any abnormalities which may indicate a leak. If any abnormalities are noted, calculations are made to determine what the “per day” discrepancy is. Daily averages will be calculated no less than once a month.

Tank levels are also used as an indicator of leaks. The tanks are checked no less than weekly. Nine feet of water is the normal depth. Any change of a foot or more triggers an investigation which includes pump operation, source meters and point of use meters being read and calculated. Depending on the results of those readings a leak investigation will begin.

**Percent unaccounted for water will be calculated monthly by comparing pumped water to water consumed.**

- ✓ Any leaks identified in the service side of the system (between source meters (wells) and service meters (buildings)) will be documented in a log. The log will include the date which the leak was discovered, the type of leak (main, valve, hydrant etc) the date which the leak was repaired, the estimated size of the leak (gpm), and the estimated amount of water lost.
- ✓ Other unaccounted uses of water such as blowing of water lines and backwash from the water softener will also be documented and incorporated into the monthly calculation of unaccounted for water. The amount used for blowing of water lines will be determined by time vs. flow. The amount of backwash from the water softener on Well #6 will be determined by time vs. flow based on manufacturers specs, pipe size and pressure.
- ✓ If unaccounted for water exceeds 15% over a 6 month period, a response plan will be submitted to DES, describing how the system intends to decrease unaccounted for water to below 15%.

**Section III. Consumption Side Management.**

**B. Outreach and Education**

1. A water conservation information handout will be added to the new employee packet with a brief explanation during orientation.
2. Water Conservation posters will be placed at strategic employee locations.
3. Water conservation handouts will be put in pay check envelopes once a year.

**C. Pressure Management**

1. Existing minimum distribution pressure (not a landlord owned system):  
60 psi
2. Existing maximum distribution pressure (not a landlord owned system):  
85 to 90 psi
3. How is pressure currently monitored and how will pressure continue to be monitored? Visual monitoring
4. What method will be used to reduce pressures in zones found to be in excess of 80 psi? PRVs

5. **What will be the timeframe for reduction (at least within 1 year of source water approval)?** Within one year of approval.
6. **If pressure reduction is not technically feasible, please explain why and describe what additional steps the water system will take to monitor and repair leakage within these zones.**

Pressure reduction is feasible but logistically difficult because it involves shutting water off to a 140 bed health care facility.

#### **D. Intentional Water Loss**

1. **Are there "bleeders" used within the system at dead ends to improve water quality or prevent freeze-up? If yes, what looping opportunities exist?**

No bleeders.

2. **Are storage tanks intentionally allowed to overflow because of system hydraulics or water quality concerns?** No

### **III. Consumption Side Management**

#### **A. Water Efficiency Measures**

1. The new jail addition has been outfitted with water conservation fixtures.
2. The bathrooms in the nursing home are scheduled to undergo renovations over the next three to five years. The bathrooms are to be outfitted with water saving fixtures.
3. The laundry facility is currently using modern, computerized programming for wash cycles that conserve water.
4. The facility is going to implement a series of phased improvements to the water system including replacement of portions of the distribution system which will reduce the potential for leaks in the future.

### **VI. Reporting and Implementation**

#### **A. Statements:**

1. The water system will submit a form supplied by DES once every three years documenting how compliance with the requirements of Env-Wq 2101 is being achieved.
2. Activities outlined in the water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.
3. A copy of the attached summary of Water Conservation Rules from the New Hampshire DES' web site will be provided to local applicable governing boards with a request that they amend local site planning requirements to reflect these requirements or to promote water efficiency.

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): Sullivan County N.H.

Owner Signature: John C. Cross Date: 11/7/12  
for Sullivan County