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

January 24, 2014

Robert Griggs
Sheltering Pines Park Realty Trust
PO Box 1019
Epsom, NH 03234

RE: Epsom – Sheltering Pines (PWS ID #:0773030)
Water Conservation Plan, January 16, 2014, NHDES # 999834

Dear Mr. Griggs:

On January 16, 2014, the New Hampshire Department of Environmental Services ("DES") Drinking Water and Groundwater Bureau received a Water Conservation Plan, signed by you on January 1, 2014, for the Sheltering Pines water system located in Epsom, New Hampshire (the "Plan"). 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 2101.04 through Env-Wq 2101.17, requirements for community water systems owned by a landlord.

Pursuant to Env-Wq 2101.11, the Town of Epsom and the Central NH Regional Planning Commission were provided copies of the Plan and other required documents.

Approval Conditions:

1. Report total monthly volume withdrawn from each source to the DES Water Use Registration and Reporting Program on a quarterly basis. DES has assigned **WUID # 20987** to the system. The first quarter report is due **July 15, 2014 for Q2 2014 (April-June).** The water system shall register as a data provider and utilize the DES OneStop reporting tool to submit water use data. Instructions for 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 contact Derek Bennett at 271-6685 or derek.bennett@des.nh.gov.

2. By **June 2, 2014**, submit the following with the system design plans:

    a. Include meter details with the system design plan including the following:

        i. The make, model, and size of the meter to be installed on each source prior to treatment or storage;

        ii. The meter make, model, and size of the distribution meter(s) to be installed:

        iii. The proposed location of the meters in the pump house.

iv. Manufacturer installation specifications and American Water Works Association installation standards; and

v. Verification that the meters have been tested/calibrated or replaced in accordance with the Plan.

3. By **December 2, 2014,** complete the following:

   a. Upon approval by DES, install the source and distribution meters;

   b. Complete a night flow analysis in accordance with the methodology described in the Plan; and

   a. Submit the results of the initial night flow analysis to DES, with a proposed baseline flow for future comparison.

4. Conduct a night flow analysis twice annually between 173 days and 187 days apart. Maintain a record of the results and the findings of a night flow analysis.

5. Distribute water efficiency outreach materials to residents twice a year. Maintain a record of the date the material was distributed and the title of the material.

6. Test/calibrate/replace all meters in accordance with the rate established in the Plan. Retain records of meter testing, calibration, and or replacement dates.

7. Maintain a log of all leaks detected. The log should include the date the leak was discovered, the date the leak was repaired, the type of leak (ex. main, service, valve), and the estimated size of leak (gpm).

8. On **January 24, 2017**, and every three years thereafter, the water system shall submit a detailed and completed compliance report form to DES documenting compliance with the Plan. A copy of the *Water Conservation Plan Ongoing Compliance 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.

9. Proposed changes to the plan shall be submitted to DES for review with a request to amend the Plan.

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

Sincerely,

Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

ec: Derek Bennett, NHDES *(LD)*
Selectman, Town of Epsom
Central NH Regional Planning Commission
Charlie Lanza, Hampstead Area Water Services

Vaughn, Kelsey

From: Herbold, Stacey
Sent: Monday, March 28, 2016 1:40 PM
To: 'Charlie Lanza'
Cc: Vaughn, Kelsey; 'Stacie'
Subject: RE: Sheltering Pines water system follow-up items (Epsom 0773030)

Hi Charlie,

Based on what was submitted the baseline flow would be 1 gpm. Also, the last piece of information I have about the distribution meters, was in an email below from December indicating that new distribution meters had been ordered and would be installed. Was this completed? If so, could you tell me the meter make, model, and size.

Thanks.

Stacey Herbold
Water Conservation Program
Water Use Registration and Reporting Program
NHDES Drinking Water and Groundwater Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
PH: (603) 271-6685
FAX: (603) 271-0656

From: Charlie Lanza [mailto:Charlie@HampsteadWater.com]
Sent: Monday, March 21, 2016 3:35 PM
To: Herbold, Stacey
Cc: Vaughn, Kelsey; 'Stacie'
Subject: RE: Sheltering Pines water system follow-up items (Epsom 0773030)

Hi Stacey,

Attached is the most recent night flow.

Thank you!

Charlie Lanza , *Project Manager*
Hampstead Area Water Services, Co.
A Division of Lewis Builders Development, Inc.
54 Sawyer Avenue
Atkinson, NH 03811
Office: 603.362.1916
Cell: 603.560.3320
Fax: 603.362.4936
Web: www.nhwaterservices.com

HAWSCO
HAMPSTEAD AREA WATER SERVICES, CO.
Serving the Water Community for over 40 years

PROPOSED WATER CONSERVATION PLAN FOR SHELTERING PINES

Hampstead Area Water Services, Co.
Sheltering Pines
Town of Epsom, New Hampshire

Prepared for:
ROBERT GRIGGS
SHELTERING PINES PARK REALTY TRUST
PO BOX 1019
405 SUNCOOK VALLEY HIGHWAY
EPSOM, NH 03234

Prepared by:
CHARLES LANZA, PROJECT MANAGER
HAMPSTEAD AREA WATER SERVICES, CO.
54 SAWYER AVENUE
ATKINSON, NH 03811

Revised 1/15/14

WATER CONSERVATION PLAN

SHELTERING PINES

WATER SYSTEM

EPA ID: 0773030

Epsom, New Hampshire

Project Description: Sheltering Pines is a 53 unit 55+ community. Sheltering Pines is a privately owned water system that provides water to tenants and includes water service in the rental fee. There is no existing irrigation or fire protection off of the water system.

Project Contacts:

Project Contact

Name: Charlie Lanza
Address: 54 Sawyer Avenue Atkinson, NH 03811
Company: Hampstead Area Water Services, Co.
Phone Number: 603-362-5333
License/Certification Type & Number: Licensed Water Operator Grade II 2861

Project Owner.

Name: Robert Griggs
Address: PO Box 1019 405 Suncook Valley Highway Epsom, NH 03234
Company: Sheltering Pines Park Realty Trust
Phone Number: 603-736-3392

Certified Operator.

Name: Richard Bibeau
Address: 54 Sawyer Avenue Atkinson, NH 03811
Company: Hampstead Area Water Company, Inc.
Phone Number: 603-362-4299
License/Certification Type & Number: Licensed Water Operator Grade II 2601

Water Meters

Source meters are installed on both of the wells. The wells are known as Gravel Well 1 and Gravel Well 2. Gravel Well 1 has a 1" Sensus Meter and Gravel Well 2 has a 1" T-10 Neptune Meter. Both meters are "original" and are 10+ years old. Both meters will be replaced during 2014.

- All water meters will be tested or replaced per AWWA standards as shown below unless prior test results indicate that meters may be replaced less frequently. DES approval will be obtained should prior test results indicate this.

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

- Meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by EnvWq 2101.04 (d)).

- There are no meters on the individual units.

Leak detection Program

Leak detection will be performed in accordance with the NHDES “Night Flow Leak Detection Methodology” as noted below. The distribution piping located within this park is primarily 2” plastic with brass fittings. There are shut off valves for many of the units and various main valves located throughout the system, which can be utilized during acoustic leak detection.

Night Flow Leak Detection Methodology

1. Distribution Meter

    a. A Meter to be specified capable of measuring low flows will be installed on the distribution line and located after treatment and storage. The meter make, model, and size will be forwarded to DES prior to purchase/installation for review and approval.

    b. Unless otherwise specified by formal documentation from the manufacturer, the meter will be tested/calibrated based on the following rate schedule:

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

The testing rate may be adjusted based on results of prior tests, but less frequent testing will be approved by DES.

c. The distribution meter will 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). Calibration and Testing records will be kept on file to include with the three year ongoing compliance report.

2. Determining Baseline Flow

a. Night time flow analysis will be conducted as described in 3.b., below, and leaks isolated and pinpointed as described in 3.e through 3.h., below.

b. Leaks will be repaired.

c. Again, night time flow analysis will be conducted as described in 3.b., below. The lowest flow will be considered the baseline.

d. The threshold above the baseline will be determined by considering the size, age, and history of the system.

e. The baseline flow and proposed threshold will be submitted to DES for review and approval. The submittal will also include the reasoning and evidence behind the proposed threshold.

3. Night Flow Analysis

a. Night flow analysis will conducted at least twice per year, but no sooner than 173 days before and no later than 187 after the past night flow analysis.. The results of each night flow analysis will be kept on file. The report will include a summary of analysis describing if leaks were detected or not, and will be submitted to DES in the Ongoing Three Year Compliance Report.

b. Water usage will be recorded every minute for one hour between 1 am and 4 am using a distribution meter. Users of the system will be requested prior to the night flow analysis to refrain from using water between 1 am and 4 am on this date. Nighttime flow analysis will be conducted prior to sprinkler season if possible.

c. If flows are above the baseline, then flows will continue to be recorded for an additional hour.

d. If flows are more than 8 gpm above the baseline, a leak will be suspected and step 3.g. will be taken.

e. If flows are still above the baseline, but no more than 8 gpm above baseline, all residents will be asked to check their homes for leaks including running toilets. Step 3.c. will then be repeated again in 3 days.

f. If again flows are above the threshold, a leak on the service side of the system will be assumed and step 3.g. will be taken.

g. If a leak is suspected, valves will be closed to isolate select portions of the system and to evaluate the change in flow as measured by the distribution meter to isolate the leak. For example, when one valve is closed, one person in the field (operating the valves) will then communicate with a second person observing the distribution meter to monitor for a change in the background flow.

h. No later than two weeks from isolating the leak to a certain branch of a system, a sub-contractor skilled in acoustic leak detection will be retained and assist with pinpointing the leak.

i. Leak detection will be conducted in accordance with "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (American Water Works Association, 2009).

j. Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.

4. Leak Log

a. A leak log will be maintained for all leaks discovered and repaired. indicating the date a leak was discovered, the date a leak was repaired, the type of leak (ex. service, main, valve), size of leak (gpm), and the nearest address to the leak.

Unaccounted for water

There are no proposed fire flows off of this distribution system.

Consumption Management

Water consumption is managed by the Park's Management when necessary.

The educational materials "Water Efficiency Practices for Domestic Indoor Water Use", "Water Efficiency Practices for Outdoor Water Use" and "An Introduction to Water Use Management and Water Efficiency Practices" located at:

http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-1.pdf

http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-2.pdf

http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-3.pdf

These materials will be distributed to members of Sheltering Pines community at least twice per year. The title of the material distributed and the date of distribution will be maintained in a log and reported in the Three Year Ongoing Compliance Report.

Pressure Management

The water system is consistent with water system industry standards and regulation and consistent with other public health and safety considerations in regards to minimum and maximum operating pressures as required by (EnvWq 2101.04 (n)). Pressures in the system are expected to range from 40 to 70 psi.

Water Use Restrictions/Actions

The Park Management implements water restrictions as needed. For example if there is a leak or over consumption, Management will restrict water as needed.

NH DES Water Conservation Report

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.

Activities outlined in this water conservation plan will be completed by the contracted water operator at the time of completion.

Public Notification

Within seven days of submitting the conservation plan to DES, the applicant shall provide a copy of the application and report via certified mail to the Town of Epsom Selectmen, and the Central NH Regional Planning Commission located in Concord.

The information provided to the Town of Epsom will include a summary of the requirements of Env-Wq 2101 and will request that the Town of Epsom amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency.

Signed copies of the Certified Mail Return Receipts (the green card) will be forwarded to NHDES.

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.

Signature Owner Name (print): Robert Griggs

System Owner Signature: Robert Griggs Date: 1-14-14